

# The Mining Journal.

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1520.—Vol. XXXIV.

LONDON, SATURDAY, OCTOBER 8, 1864.

(STAMPED.....SIXPENCE.  
UNSTAMPED.....FIVEPENCE.)

**MR. JAMES CROFTS, SHAREBROKER,**  
No. 1, FINCH LANE, CORNHILL.  
(Established 22 years.)

Mr. Crofts transacts business, in the way of PURCHASE or SALE, in every description of stocks, but particularly in BRITISH MINES, in no case departing from the position of a broker, at net prices.

Holder of mining shares DIFFICULT OF SALE in the OPEN MARKET may find purchasers by negotiation, through Mr. Crofts' agency. Also, parties requiring ADVISE how to set as to the DISPOSAL, or ABANDONMENT, of doubtful mining stocks may profitably avail of Mr. Crofts' long experience on the market in all cases of doubt or difficulty.

Shares recommended and procurable by Mr. Crofts, at the lowest market prices:—South Darro, Crebor, New Wendron, South Condarrow, Bedol-Aur, North Chiverton, Vale of Towry, Pendron, Hope, Gawton, East Russell, Grylla Florence, and Leawood.

FOR SALE, net:—200 Prince of Wales, 4s.; 50 Havan Lead, £2 (4s. paid); 10 British Copper, 10s. David's Gold, 6d. (an offer for the two last).

FOR SALE:—250 Vale of Towry, 6s. 9d. net, immediate delivery.

October 7, 1864.

**MR. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.**

JAMES LANE has FOR SALE at net prices:—5 Basset and Grylla; 3 Buller, £16; 25 Bedol-Aur, 12s. 6d.; 60 Crebor, 42s.; 50 Colenso, 12s. 6d.; 100 Calstock Consols; 20 Dale, 50 East Providence, £37½; 20 East Abraham, £3; 50 East Jane, 25s.; 20 East Lovell; 10 East Chiverton, £3; 20 East Russell, £4½; 50 Great Bury; 50 Guriy, 12s. 6d.; 40 Hallenbangle, £3½; 25 Havan (£4 paid), 25s.; 5 Wheel Margaret, £3; 50 New Wh. Rose, 6s. 6d.; 20 North Trekerby, £3; 100 North Devon, £2; 50 Prince of Wales, 4s. 6d.; 25 St. David's Gold, 6d.; 5 Sittney and Carnmeal, £7½; 10 Wheel Kitty (St. Agnes), £6; 10 United Consols, 3s.; 50 Vale of Towry, 6s. 6d.

**MR. PETER WATSON, 79, OLD BROAD STREET, LONDON, E.C.**

**MR. LEAN, STOCK AND SHAREDEALER,**  
11, ROYAL EXCHANGE, LONDON, E.C.

Shares bought and sold on the usual commission. Telegraphic messages promptly attended to. Mines inspected, and reliable information given. Established 16 years.

FOR SALE:—20 Worra Down, 100 West Jane, 30 East Rosewarne, 10 North Croft, 20 East Russell, 50 East Laxey, 50 Great South Chiverton, 50 Bedol-Aur, 20 Great Laxey, 50 East Providence, 100 North Miners, 10 East Trekerby, 10 South Darro, 10 Trelyon Consols, 5 Providence, 50 Rosewarne Consols; 5 Britany, 25s.

N.B.—Mr. LEAN's Mining and General Investment Circular, No. 101, now ready, which will be sent free on application.

**JOHN RISLEY, 32, LOMBARD STREET, LONDON, E.C.**

SHARES IN MINES BOUGHT AND SOLD on commission, at 1½ per cent., for immediate cash. Bankers: London and Westminster, Lothbury.

**RICHARD CLIFT, MINE SHAREDEALER,**  
late of Redruth, now 48, THREADNEEDLE-STREET, LONDON, where all letters are to be addressed.

**NOTICE OF REMOVAL.**

**MR. J. B. REYNOLDS** has REMOVED from 54, Threadneedle Street, to 2, HATTON COURT (49, Threadneedle Street).

N.B.—Orders to buy and sell mining shares promptly attended to.

Mr. Reynolds has SPECIAL BUSINESS in New Wheel Vor and Metal United.

October 7, 1864.

**MR. T. ROSEWARNE, 81, OLD BROAD STREET, LONDON, E.C.,** has BUSINESS in the FOLLOWING SHARES, at the quotations named, cash on receipt of transfer:—

Bedol United .....	2½ - 3½	Hallenbangle .....	£ 3 - 3½
Clifford Amalgamated .....	30½ - 31½	New Martha .....	12s. - 14s.
Chiverton .....	5½ - 6	New Trekerby .....	1½ - 1½
Chiverton Moor .....	2½ - 3	New Rosewarne .....	3 - 3½
East Basset .....	6½ - 7	Providence .....	11½ - 12
East Carn Brea .....	4½ - 5	South Condarrow .....	37 - 38
East Russell .....	4½ - 5	Tincroft .....	17 - 18
East Rosewarne .....	2½ - 3½	Wheel Uny .....	3½ - 4
East Lovell .....	7½ - 8½	Wheel Seton .....	20s - 21s
East Grenville .....	7½ - 8½	Wheel Crebor .....	42s. - 44s.
Great Laxey .....	15 - 16	Wheel Grenville .....	6½ - 6¾
Great Bury .....	2½ - 3	West Chiverton .....	52½ - 57½
Hingston .....	4 - 4½		

An OFFER WANTED for—East del Rey, New Lovell, North Grambler, East Providence, North Downs, North Pool.

Money advanced on good mining shares. Bankers: Bank of London.

October 7, 1864.

**MR. D. STICKLAND, M.E.,** having had upwards of 40 years' mining experience in Cornwall, several years of which he has had the entire management of mines therein, enables him to GIVE GOOD ADVICE thereon.

MINES INSPECTED and faithfully REPORTED ON. DEALER in MINING, RAILWAY, and OTHER SHARES.

His monthly "Circular" for August contains a selected list of Cornish and other mines. Forwarded on receipt of six postage stamps.

Wellington Chambers, 75, Cannon-street West, London, E.C.

**JAMES HUME, SHAREBROKER, 74, OLD BROAD STREET, AND MINING EXCHANGE, LONDON, E.C.**

Closing Prices. Closing Prices.

East Carn Brea .....	£ 6½ - 7½	South Condarrow .....	£ 17½ - 2
East Grenville .....	7½ - 8½	Crebor .....	42s. - 44s.
Great Vor .....	28½ - 29½	Grenville .....	6½ - 6¾
New Wendron .....	3½ - 4½	Clifford .....	30 - 31

J. Hume's Circular for October will be ready on the 10th inst., and will be forwarded on receipt of six stamps. Annual subscription 5s.

SOUTH CONDARROW.—These shares have advanced during the week, and will continue to advance. There is now a rich copper lode in the bottom level, and in a few fathoms further sinking this ore will be in the shaft; it is the West Basset lode. Mr. Hume recommends these shares as the best investment on the market.

NEW WENDRON.—Capt. Chappell inspected this mine on the 5th inst. He states that "in five weeks the shaft now sinking on a lode, worth 18s. per fm., will be complete to 25 ft., when they can drive under a long run of tin ground, worth 25s. per fm., and that large quantities of tin will be found near the junction." He has no doubt that it will soon be a dividend mine. The full report by Capt. Chappell appears in J. Hume's October Circular.

Business in all mines transacted at closest market prices.

Bankers: London Joint-Stock Bank.

**MR. JOHN BATTERS, STOCK AND MINING SHAREBROKER, 13, THROGMORTON STREET, LONDON, E.C.,** pays particular attention to British Lead, Copper, and Tin Mines, for which he solicits orders to sell or buy, at net prices.

FOR SALE:—50 East Chiverton, 30s.; 50 Vale of Towry, 6s. 6d.; 10 Central Miners, 30s.; 30 South Grenville, 11s.; 10 North Grambler.

BUYER of Central Miners.

**MR. WALTER TREGILLAS, STOCK AND SHAREBROKER, 3, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.,** strongly recommends the following mines for investment, which are safe to have a rise in price:—Santa Barbara Gold, North Rosewarne, Wheel Lovell, New Rosewarne, New Wendron, East Basset and Grylla, New Trevenen, and Great Wheel Vor.

**MR. J. P. ENDEAN, STOCK AND SHAREBROKER, 1, CROWN COURT, OLD BROAD STREET, LONDON, E.C.**

Having had 25 years' experience in the mining districts of Devon and Cornwall, and three in the London market, with daily information of important changes from qualified agents, also the most authentic reports relating to other investments, he is in a position to afford the earliest information to his clients, and to direct capitalists whether to buy or sell in mines, railways, or other securities.

Investors should apply to him for reliable information relative to the Chiverton Mines, also the Camborne and Illogan districts.

A carefully selected list of sound progressive and dividend shares (certain to give a large percentage immediately) forwarded on receipt of 5s. in stamps.

Orders and telegrams receive immediate attention.

**MR. GEORGE BUDGE, SHAREDEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C.** (Established 17 years), has FOR SALE at net prices:—5 East Caradon, £27½; 1 Wheel Seton, £21s; 50 Sittney Wh. Metal; 30 East Russell; 100 East Seton; 25 East Carn Brea, £7; 2 East Basset; 20 Hallenbangle; 200 Vale of Towry, 6s. 9d.; 50 Kelly Bray, 14s. 6d.; 20 Sittney and Carnmeal; 100 Merilyn, 2s. 6d.; 20 Trencrom, £23½; 50 Nova Scotia; 100 Anglo-Brazilian, 4s. 3d.; 5 Billins; 300 Great Northern; 5 Clifford Amalgamated; 20 North Trekerby; 10 Don Pedro, 11s. 3d.; 100 Santa Barbara; 100 Welsh Gold, 22s.; 60 New Martha; 25 Wheel Crebor; 50 East Rosewarne, £37½; 100 East del Rey; 2 Wheel Buller; 100 Nant-y-lago, 10s.; 25 United Mexican; 30 Wheel Hearle, 18s. 9d.; 20 North Croft; 18 Marks Valley; 180 Wheel Pollard, 2s. 3d.; 10 Chiverton Valley; 25 Bedford United; 100 West Maria and Fortescue; 20 North Shepherds; 2 West Sharp Tor; 50 Worthing, 18s. 6d.; 50 Dale.

**G E O R G E M O O R E,**  
1, CROWN COURT, THREADNEEDLE STREET.

**JAMES HERRON** has FOR SALE the following SHARES, at the prices quoted, and FREE OF COMMISSION:—

100 Anglo-Brazilian, 4s. 6d.	50 St. Northern Cop., 1s 3d (call paid).	20 Sittney Metal, 25s.
10 Anglo-Mex. Mint, £19.	10 St. No. Down, £44½.	1 South Frances, £37½.
1 Buller, £19.	3 Great Fortune, £8.	10 Sittney and Carnmeal.
3 Brynford Hall, £21 18 9	30 Glasgow Caradon, £37½.	100 Santa Barbara, 8s. 3d.
3 Bryn Gwlog, £25.	10 Great Laxey, £15 7s 9d.	30 St. Day United, 29s. 3d.
20 Buller and Basset, 2s.	70 St. South Chiverton.	50 St. John del Rey, £37.
2 Clifford Amalgamated.	20 St. Wh. Bury, £27½.	50 St. David's Gold, 2s. 6d.
2 Cwm Erwin, £33½.	20 Hallenbangle, £37½.	50 St. Just Consols, 5s.
20 Chiverton Val., £11 17 6	1 Herodfoot, £38½.	30 So. Car. Hooper, 4s. 9d.
20 Cape Copper, £10½.	20 Hingston Down, £4.	1 Stray Park, £23½.
20 Carn Camborne, 33s. 9d.	5 Kitty (Leland), £10.	1 Treawny, £19½.
10 Chiverton, £6½.	20 Marke Valley, £4 7s 6d.	10 Tolvadden, 20s. 6d.
20 Charlotte United, 2s. 9d.	50 Nant-y-lago, 4s. 6d.	10 Tincroft, £17 18s. 9d.
20 Crenver and Abraham, £1½.	5 North Wh. Croft, £23½.	50 Treawtha, 9s.
50 Calstock Consols, 22s.	50 North Devon, 37s. 6d.	50 United Mexican, £5.
5 Central Miners, 37s. 6d.	10 North Downs, 10s. 9d.	1 W. Chiverton, £58.
10 Cobbe, £27½.	20 New Wendron, £37½.	30 Treleigh, 15s.
5 Cook's Kitchen, £12½.	10 North Trekerby, £3.	10 Trewoile, £2.
5 Clujah & Went., £3 12 6	40 New Vor & Metal Utd., £2.	10 Wheel Edward, 12s. 6d.
50 Don Pedro, 7s.	50 North Miners, 4s.	20 Wheel Hartley, 6s. 9d.
40 Dale, 8s. 9d.	40 New Martha, 25s.	1 Wheel Seton, £207½.
1 East Basset, £23 18s 9d.	1 North Rosekar, £31½.	100 Welsh Gold.
20 East Carn Brea, £23 18s 9d.	20 North Shepherds, 33s 9d.	5 West Caradon, £7.
100 East del Rey, 11s.	10 North Robert, 2s. 6d.	2 West Tolgus, £32½.
5 East Russell, £5.	10 North Pool, 40s. 9d.	30 Wh. Grenville, £34½.
5 East Vor, £2.	1 New Seton, £55.	1 Wh. Margaret, £27½.
15 East Lovell, £8.	3 Nangles, £26½.	2 West Frances, £20.
30 East Grenville, £7 11 3	30 N. Birch Tor & Vitter, £24½.	100 Worthing, 18s. 6d.
50 East Clogau, 2s.	20 North Basset, £3.	10 Wheel Crebor, 44s.
20 East Jane, 24s.	5 New Rosewarne, £11.	20 West Cons., £3 18s 9d.
50 East Laxey, 38s. 9d.	1 Providence, £38½.	10 West Basset, £3½.
20 East Abraham, £2½.	100 Port Phillip, 18s. 9d.	10 Wendron Consols, £3.
30 East Chiverton, 42s.	50 Quebrada (£5 10s. paid)	1 Wh. Mary Ann, £15½.
30 East Providence, £37½.	25 Rosewarne Utd., 34s.	50 Wheel Uny, 3s. 6d.
50 East Caradon, £27½.	50 Rosa Grande.	30 Wheel Croft, 12s.
50 Fonna, £37½.	10 Rosewarne Consols.	1 Wheel Basset, £22.
5 St. Wh. Vor, £29½.	20 South Grenville, 10s. 9d.	100 Yudanantun, £1½.
50 St. So. Tolgus, £2 14 6	20 South Grenville, 10s. 9d.	20 Wheel Harriet.
2 Adam's-court, Old Broad-street, October 7, 1864.		10 Wheel Hearle, 9s. 6d.

**MESSRS. VIVIAN AND REYNOLDS, 37, OLD BROAD STREET, LONDON, E.C.,** MINING ENGINEERS, INSPECTORS OF MINES, COMMISSION, and GENERAL AGENTS for the PURCHASE or SALE of MINE SHARES, RAILWAY, and EVERY OTHER DESCRIPTION OF STOCK.

Commission on share transactions 1½ per cent. on £100 and above, and 2½ per cent. on less sums.

**NOTICE OF REMOVAL.**—Mr. EDWARD COOKE has REMOVED from No. 75, Old Broad-street, to No. 2, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.

**MR. EDWARD COOKE, MINING SHAREBROKER,**  
2, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.

Mr. Edward Cooke has removed to the above address, where all communications on matters relating to business will meet with his usual attention.

NORTH CHIVERTON.—This mine is really deserving of great attention, and EDWARD COOKE strongly advises parties to send an agent to inspect the property immediately, while it is selling at a very low price. The intrinsic merits of this mine must necessarily cause a great rise in price ere long.

Having visited other mines during the current week, EDWARD COOKE will feel much pleasure in answering any communications from parties inclined to invest in legitimate mining property.

Oct. 7, 1864. Bankers: Alliance Bank, Lothbury.

**MR. GEORGE BATTERS** strongly recommends his friends to buy West Chiverton, Chiverton, Herodfoot, South Caradon, Devon Great Consols, Great Wheel Vor, Prosper United, Wentworth Consols, and Sittney Wheel Metal for investment. These shares will pay good interest for money at present quotations.

76, Old Broad-street, London, E.C.

**MR. G. D. SANDY, SHAREDEALER, No. 48, THREADNEEDLE STREET, LONDON, E.C.,** has SPECIAL BUSINESS in the FOLLOWING SHARES:—

80 Bedol-Aur.	100 Great Retailack.	30 Stray Park.
100 Caradon Hill.	50 Great South Chiverton.	30 Tolvadden.
20 Camborne Vean.	20 Great Laxey.	50 West Great Work.
2 Clifford Amalgamated.	3 Herodfoot.	20 Wheel Agar.
3 East Basset.	100 Kelly Bray.	1 Buller.
50 East Grenville.	5 New Rosewarne.	3 Tremayne.
60 East Laxey.	50 North Downs.	35 Wh. Kitty (St. Agnes).
20 East Rosewarne.	25 North Shepherds.	50 Wheel Basset.
10 Gonnenna.	30 North Trekerby.	10 Wheel Ludcott.
15 Great North Downs.	20 Pendron Consols.	200 Uny.

N.B.—Sellers or buyers of any of the shares named can be treated with at close prices, net or on commission.

A selected list of bona fide shares for investment forwarded gratis.

Current Daily Price List may be obtained as usual.

**GEORGE RICE, SHAREBROKER, 5, COWPER'S COURT, BIRCHIN LANE, LONDON, (22 years' experience),** has SPECIAL BUSINESS as BUYER or SELLER, for cash or account, in the FOLLOWING MINES:—

Carn Camborne .....	32s. - 34s.	East Wheel Grenville .....	£7 ½ - 7¾
Chiverton .....	£ 6 - 6½	Great Wheel Vor .....	29 - 29½
Clifford Amalgamated .....	30 - 31	Nangles .....	25 - 26
East Basset .....	6 - 8½	Marke Valley .....	4½ - 4¾
East Caradon .....	26 - 26½	North Trekerby .....	3 - 3½
East Russell .....	4½ - 4¾	Wheel Crebor .....	42s. - 44s.
East Carn Brea .....	6½ - 7	Wheel Grenville .....	6½ - 6¾

Money advanced on mining shares. Bankers: Bank of London.

Oct. 7, 1864.

**MR. WILLIAM BARTLETT** has the FOLLOWING SHARES FOR SALE:—

5 Nangles, £26½.	20 Wheel Uny, £37½.	20 Wheel Agar, £27½.
100 Lady Bertha, 8s.	30 Sittney Metal, £11½.	20 North Basset, 32s. 6d.
10 Chiverton, £6½.	20 Pendron, £37½.	20 East Providence, £23½.

Also, SPECIAL BUSINESS in the following:—

East Basset.	Calstock Consols.	South Caradon.
Clifford Amalgamated.	North Phoenix.	Kelly Bray.
Trelawny.	South Caradon Hooper.	Great Fortune.
East Caradon.	North Trekerby.	Wheel Seton, &c.

SHARES WANTED.—100 Kelly Bray, 10s.; 5 Trelawny, £16½.

AN OFFER WANTED FOR—5 Spenns Moor.

Offices, No. 2, Bucklersbury, London, E.C.

Bankers: Alliance Bank, Lothbury.

**MATTHEW GREENE, STOCK AND SHAREDEALER,**  
begs to inform his friends and clients that he has REMOVED his offices to 9, GRACECHURCH STREET, near CORNHILL, LONDON.

Mr. GREENE continues to advise his friends and clients to purchase East Laxey shares at present prices, £24½.

REPORT.—EAST LAXEY.—The lode in the shallow adit is not so wide as last reported, but increasingly promising, the gossan being softer and more impregnated with lead and jack. In the deep adit the lode is about 2 ft. wide—a rich looking gossan, mixed with jack. On No. 1 lode we have (this week) commenced to sink a new shaft, and are proceeding with the preparatory work for the erection of a new 50-ft. wheel about halfway between the two lodes, in order to command both in depth, and suitable for crushing the ores as well.—R. Rows.

Shares bought and sold on the usual terms.

Bankers: London and County Bank.

**MATTHEW GREENE** has REMOVED from 27, Austinfriars, to No. 9, GRACECHURCH STREET, near CORNHILL, LONDON.

**MR. WILLIAM MARLBOROUGH, STOCK, SHARE, AND MINING BROKER, 48, THREADNEEDLE STREET, LONDON, E.C.** (Established TEN YEARS.)

BUSINESS TRANSACTED in EVERY DESCRIPTION of SHARES, at closest market prices, either net or on commission. Reliable information given either personally or by letter, upon the purchase, sale, or exchange of every description of stock.

FOR SALE:—60 Kelly Bray; 10 East Russell, £25½; 50 Bedol-Aur; 25 East Laxey; 50 Wheel Crebor, 43s. 9d.; 10 Great Laxey; 30 South Condarrow; 70 Wheel Uny, 3s. 6d.; 1 New Rosewarne; 25 East Grenville, £7½; 10 Wheel Grenville, £6½; 20 South Grenville, 11s. 9d.; 5 East Lovell, £3½.

**MR. T. P. THOMAS, MINING AGENT AND AUCTIONEER,**  
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

**MR. T. E. W. THOMAS, MINING AGENT AND GENERAL MINING SHAREDEALER,**  
2, PINNER'S COURT, OLD BROAD STREET, LONDON.

**MR. FRANCIS G. LANE, No. 2, ROYAL EXCHANGE, LONDON, E.C.,** has the following SHARES FOR SALE, free of commission:—

20 East Carn Brea, 47.	25 East Vor, £37½.	25 North Basset, 35s.
20 Great Laxey, £15½.	50 Vale of Towry, 6s.	50 North Miners, 4s.
50 Prince of Wales, 4s.	20 East Rosewarne, £3.	20 Hallenbangle, £3½.
5 Wentworth Cons., £7.	10 Cape Cornwall (£2 10s. paid), 27s.	50 Glasgow Caradon, £23½.
20 South Lovell, £2.	20 South Darro, 30s.	5 St. Just Consols, 4s. 3d.
20 North Shepherds, £2.	20 New Martha, 23s. 6d.	50 Wheel Crebor, 43s. 3d.
30 Chiverton Valley, £2.	20 New Wheel Vor and Metal United, 100 St. David's Gold, 200 West Trevelyan, and 100 Trumpet United, either at per share or for the lot.	20 St. Just United, £3.

Any reasonable offer will be accepted for 20 New Wheel Vor and Metal United, 100 St. David's Gold, 200 West Trevelyan, and 100 Trumpet United, either at per share or for the lot.

Parties of respectability can have transfers registered into their names previous to payment.

Bankers: London and County Bank.

**MR. F. W. MANSELL, MINING SHAREBROKER,**  
75, OLD BROAD STREET, LONDON, E.C.

**MR. WM. BIRDSEY, MINE AND SHAREBROKER,**  
No. 2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.

W. BIRDSEY is a BUYER of 500 (or any part of) Allen shares, at present prices.

**MR. JOHN R. PIKE, GENERAL SHAREDEALER,**  
OFFERS his SERVICES to INVESTORS.

3, PINNER'S COURT, OLD BROAD STREET, LONDON.

**SHARES WANTED IN THE FOLLOWING MINES,**  
which are at the same time strongly recommended for an early and immense rise in value:—

Bryntail.	Camborne Vean.	East Lovell.
Clifford Amalgamated.	Kitty (Leland).	Trencrom.
Carn Camborne.	South Basset.	Rosewarne United.
New Rosewarne.	East Grambler.	West Caradon.

Friends and investors, if they would consult their own interests, will do well to act upon this advertisement, and not treat it as one of the empty statements so often put forth in the public journals.

HUBERT BARNES RYE, Mining Offices, 77, Old Broad-street, London, and Mining Exchange, Oct. 7, 1864.

**JAMES B. BRENCHELY** has SPECIAL BUSINESS, for cash or account, at net prices, in the FOLLOWING SHARES:—

JAMES B. BRENCHLEY has SPECIAL BUSINESS, for cash or		
account, at nett prices, in the FOLLOWING SHARES:-		
1 Basset.	4 Great Fortune, £7½.	2 Providence, £39.
20 Crebor, 43s.	20 St. So. Tolgus, £27½.	50 Redmoor, 3s. 6d.
15 Carn Camborne, 33s.	5 St. Wheel Vor, £29½.	1 Seton.
100 Dale, 6s.	25 Kelly Bray, 15s.	2 Trelawny, £19.
2 East Basset, £62½.	3 Margaret, £8.	20 Union, £1½.
10 East Carn Brea, £7.	25 North Trekerby, £37½.	5 West Caradon, £7.
20 East Grenville, £7½.	5 North Rosekar, 21s.	1 West Seton.
20 Frank Mills, £43½.	(call paid).	



## Original Correspondence.

## THE ROCK-BORING MACHINES.

SIR,—The exhibition of the rock-boring machine by Mr. E. S. Crease, and the prominent notice thereof at the Royal Cornwall Polytechnic Society's exhibition, and in the Journal, has but just been brought under my notice, and I take this first opportunity to state that the machine, as described in the Journal of Sept. 17, is my own invention, and that I completed a machine as described previously to June, 1863. I have since then driven 8 fms. 4 ft. in 67 stems, at the Dolven Mine, Cardiganshire, at less than the usual labour cost, before April, 1864. A drawing of the machine was furnished to Mr. Twite, and some notice given of it at the Royal Polytechnic Society's meeting in 1863. How, then, Mr. Crease can claim to be considered the inventor I cannot understand, as I am able to prove that every movement of the machine, except the motion for turning the borer and feeding, was invented by me, and seen by Mr. Crease, months before he began the one he has now obtained a silver medal for as the inventor. I await Mr. Crease's reply, as I have much more to say on the subject, and I challenge Mr. Crease to refute the statement here made. I am prepared to forward the machine in question to the Royal Cornwall Society any day, which, with proof of the time it was made, will fully establish my claim to the prize obtained by Mr. Crease.

I may add, that a specification and drawing were sent to Mr. Charles Twite, who, with Lord Kinnaird and the other members of the Royal Mines Commission, witnessed a trial on a block of stone, and made a most minute examination and investigation of its merits, of which they expressed themselves fully satisfied, and made a special report of the same (of which I will get Lord Kinnaird to furnish you a copy), on July 9, 1863.

Vigra and Clogau Mine, Oct. 4. GEORGE GREEN.

## POPE'S STONE AND MINERAL BREAKER.

SIR,—Having attended at the manufactory of Mr. Pope, on Saturday last, to witness some experiments with one of his small machines, several pieces of copper slag, about 5 by 8 inches (which had previously been tried to be broken by a Cornish crusher, without any impression being made upon it further than just chipping it here and there), was broken down to pieces of about the size of road stone, at the rate of about 10 or 12 tons per day. We then tried some very hard stone from the black rock in this neighbourhood; of this I should say from 15 to 20 tons per day may be broken. Some limestone was then put in, which was reduced at about 25 to 30 tons per day; this was done with one of Mr. Pope's small machines—size, 8 in. by 5 in.; length over all, 4 ft.; width, 2 ft. 8 in.; height, 3 ft. 8 in., and weighing about 1 ton. I shall shortly have the opportunity of sending you the result of a trial of one of his larger machines; and with regard to the simplicity of its construction, I believe it to be far superior to any other that I have seen, whilst its cheapness renders it the most economical. It may be here necessary to say something about the mechanism: its chief points being that the movable jaw is moved by an eccentric, attached to a revolving shaft, and working against an anti-friction roller at the back of the jaw, which is worked on a spindle at top, and the eccentric being cast in a chill on its wearing face, it is not so likely to get out of order.—Bridge-street, Bristol, Oct. 6. W. T. RAWLE.

## THE TIN TRADE.

SIR,—It was remarked in last week's Journal that there have been several circumstances tending to unsettle the market for tin, and it was "hoped that their effect would be but temporary." Now, although I neither join in that hope, I do not see any grounds for the supposition—neither tin nor copper are at all likely to remain permanently higher than at present for some time to come, so that it would be far better for miners and mine adventurers to base their calculations of probable profits on existing prices, and turn their attention to the obtaining of the produce in a more economic manner. The increase in the export of tin during the first eight months of the present year was only about 170 tons, worth 17,024l., whilst copper showed an actual decrease of nearly 4500 tons, worth no less than 444,846l.; and in both cases the supply is continually increasing, whilst the demand either remains stationary or declines. There was an actual increase in the quantity of metallic tin produced in 1863, as compared with the preceding year, of 1530 tons, worth 387,486l.; hence whilst we are increasing our sales to the extent of 170 tons, and 17,024l., in eight months, our supply increases to the extent of 1020 tons, worth 258,324l.; or, in other words, we are augmenting our stock of tin precisely six times as rapidly as we ought to, and nothing can justify the anticipation of an advance whilst this state of things continues.

The position of copper is still worse, our demand decreasing at the rate of 444,846l. in eight months, whilst our supply diminishes by only 56,222l., a decline which is far more than compensated for by the increased quantity of copper ore imported. The only remedy for the present unsatisfactory position of the copper and tin trades is for the British capitalists entirely to stop the supply of money for working foreign mines, and devote all their energies at home. The working of German, South American, and other foreign mines, whilst they yield no profit to the English shareholder, has the effect of so flooding the market with ore, that even English mines, which would yield profits, are materially prejudiced. Let the supplying of funds to foreign mines be stopped, and prosperity will return.

D. R.

## ENGLAND'S MINING SCHOOL.—No. XII.

## MR. N. ENNOR'S VIEWS ON THE FORMATION OF GRANITE.

SIR,—In my last letter I finished my theory on Coals, for the present. Before I take up Granite, I have to notice and call attention to a very material point, which is that the land we now live on is not the same as that on which the inhabitants of the world before the flood lived on. The land we inhabit they never saw, the land we see gives us clear proofs of this. The ancient land, with all its inhabitants and all their works, was engulfed in the ocean; it is useless for man now to search for any of their remaining relics, they will not be found. No professional man need make shells his god. To discover this, he ought to have discovered long since that nothing but shells, and fish, and water animals can be found on the present earth. He has them all handed down to him as living evidences, even to the tops of the high hills, that the world was turned over, and we have only the once sea bottom to inhabit. I ask them to disprove this. It is fabulous nonsense for any man to tell us all the hills that contain the relics of the once ocean have been tilted up since the deluge. We have no hint of such a thing ever occurring since the deluge. What proof is left for us, either by tradition or any inspired writer? I say, everything on the face of Nature goes to prove that man now is not on the same land as man was before the flood; this appears to be all but lost sight of by the earth's present inhabitants. My theory, I may say, is all but a new one; still, I believe it is a correct view of the world's position, and I shall carry out my views in my letter, so as to open a wide and, I believe, the true field for argument.

In taking up granite, I first notice that granite, like coal, is a secondary rock, and formed from the ocean's precipitate, where it crystallises and forms rocks, as coals do. The principle and the action are nearly the same as in the formation of coal. I have noticed before that I believe all substances originated from gases. The real difference between all substances in bodies, whether rocks, mineral, vegetable, or animal matter in compounds, is but little, and that but trifling changes occur from the variation of a few parts in combination. I have also noticed that all rocks above the sea level average two-thirds silica. Judging from the quantity of silica we see thrown off from the interior, we have grounds to suppose that the interior contains far more. I suppose the interior to be a mass of rocks, and all of nearly the same compound, and that man now in existence never saw primitive rock. What man sees are all working rocks, that are undergoing changes necessary to support nature. Men before the deluge might have seen primitive rocks, much like the working rock, commonly called granite. See the variety of rocks of a granitic character wrongly called granite, which are known to be a compound of substances varying much from each other. Where all the rocks called granite primitive, they would be formed of nearly the same constituents. This is not the case. Granite is, like every other rock, found to change in a mile, or even in a hundred yards; this goes to prove that it is a rock working under the same law as every other rock known. I am not satisfied that any of our so-called scientific chemists have given us true assays as to the different constituents of granite in different localities in Cornwall. I know from sight they vary much. The granites of Cornwall are chiefly disintegrated quartz, and the china-clay stratum near St. Austell is disintegrated felspar. I may say there are over ten varieties of granite in Cornwall and Devon; there are also many varieties of felspar, mica, and schorl; these should be carefully analysed, as any substance overcharged with potash is not congenial to the growth of even tin ore. I notice that Mr. Twite, of the Mining School, has made a move in the right direction on these subjects; I hope he will follow it up, as it is the most essential point to master. Cornish granite about productive lodes we must feel convinced aids the growth of tin, other granite that is not of the same constitution will not do so. Man must feel convinced that there are natural laws prevailing in the earth; he should never rest satisfied until he has found them; many of these laws appear to be within the grasp of man, then why neglect to discover them? I mention these subjects to draw men's attention. This matters but little in my describing as to how granite is formed, or what is genuine granite, or what is not, as the whole of this class of rock is all formed by crystallisation. I say the sea is the parent of every rock visible to man, and from the moment that the original substances became a condensed mass, and the water found its bounds, matter began to move and seek its mate, and to join and form new rocks and vegetable substances; it then moved on to form animal substances, and it soon found its round of duty. Electricity, polarity, and life entered the mass; everything was instantly in motion, the world was finished a most complete picture of mechanism.

Before I go into my description of rocks and their formation, I cannot help making a

few well-called-for remarks on the men who came forth at Bath to fight the great battle so long waged between the Theorists and the Practicals—or, in other words, between common sense and trumpery theory. There were men present who ought to have been the leading men of the universal world, men of supposed learning, talent, and title, men that should have been the true rulers of science, then what was the result of the meeting? I will briefly describe a portion, and leave the public to be their judge. These men were even aided by our Government with guns of the largest calibre to shoot down England's valuable Practicals, that have aided them with thirty millions sterling of mineral produce annually. Then why wage war of extermination against them? Over forty thousand have already left England's shores to fight for and aid our foes against us.

Well, these men met by appointment at Bath, with a full determination to carry everything before them, not in their old and usual way of fighting, but they had actually stole a march on the lying Yankee, and brought up guns to fire the new long shot. They then called in Messrs. Phillips against us, who I said to have caught a glimpse of Yankee fighting with their long shots, wadded with lies. He took position, and did not hesitate, but at once, without giving notice, fired the newly-invented long shot at us; and long it was, for the first shot fired, said to have been invented by Prof. Thomson, was ninety-eight millions of years long, and a most terrific shot it was; we thought it sufficient to close heaven and earth. But he was not content with that shot, he got a second, invented by Prof. Thomson, one thousand and eighty millions of years long. This, all may suppose, caused most men present to stand aghast, but a few old dupes did mumble out "It is a wonderful length, where could they have got the materials from to make it." In the midst of this stupor, bang went a great gun with a third shot, twelve hundred and thirty millions of years long; this was brought up by all a finisher, and they began winding up with an experimental shot, invented by Mr. Croil, to knock down glaciers. This shot was only a hundred thousand years long; this, of course, did not do much damage to anyone in attendance, as it was elevated away towards the hills. The next was a new experimental shell, invented by Sir C. Lyell, only eighty three thousand years long, charged with dead men's bones, old arrow-heads, stone hammers, and a few drift relics; this shot was certainly more amusing than damaging. Then came Sir R. Murchison, with his new shot, charged only with his delight shells; I am not aware whether he named how many years long it was, but he fired it into the interior of Africa to find the source of the Nile. I now see a report, just arrived, that it fell a long way short. The face was now thought to be winding-up by the minor fry, when nearly all present took to a sleepy position, and bang went Mr. Saunders's gun, loaded with seventy two thousand dead men, said to have been hung by Henry VIII.; he aimed well, and hit Dr. Hili rather hard.

With this I took my departure, and got out of the way of such extraordinary long shots; but I now see my old friends, Messrs. Hopkins and Shepherd, have charged their guns for them. I hope they will not elevate them too high, and miss, and kill my friend Mr. J. Jones instead, as I have some respect for him. Then, I say, what a mind has man for inventive genius. These men must be possessed with an unfathomable amount of knowledge, composed of random science. We talk about inspired writers, what were they compared with these men; who would presume to say they were not deserving titles? Men that can trace the world back to the origin of time, and tell us it took two thousand two hundred and ninety-eight millions of years cooling to the temperature of 77°. They did not tell when God lit the first fire, they will do that next time, and also tell us how long the earth was purifying before it began to cool. Here is a wonderful interpretation, as they give cooling time to a year, and heat to a degree. These men, to me, have cast all traditions and records to the wind, whether written by Moses or other inspired writers; the Bible records are all upset, as we find all inspired writers are silent as to the world ever being a ball of liquid fire, or that it was charged with combustibles and exploded, or burst into flames, or they do not even say that the world was ever burning. They must have been very dull and short-sighted not to have made any progress in the arts.

Were men now to be rained down from the clouds, would they be a thousand years before they learned how to make huts, cultivate food, and cut stones? By any rate, they would soon learn to roll stones together as monuments or records; we find none of their works left. Men further tell us of the breaking up of the earth from its interior fire, and of the immense cavities it left there. Let them show me where they exist. In my long experience I never discovered anything of the kind; I never saw a break even in the rocks further than by a fall of some cliff. These breaks never unite; all rocks are the same as they were grown, with the exception of the interior of the earth, and to cavities ever met with by miners in all their works or excavations, further than small portions of substances in lodes that have dissolved and gone off, leaving small cavities called vughs. In lime rocks a wall is found; these were once the up passages of water, and when the present land was brought above water they became the down passages. They are now most times found dry, and used by animals. These run through lime rock in places for miles. I never saw a cavern but what was in lime formations, or on the sea-shore, where the sea had washed them out on soft faults or lodes. We often hear of miners boring to old mines, and getting drowned, but I never yet heard of a man being drowned from his boring to one of the earth's natural caverns. But nearly every professional man who has written a book believes that such things do exist, and that they are living. But practical men who excavate the rock in every portion of the world never find them, and I say openly it is ridiculous nonsense to write or even talk of the existence of such things; they are no better than old fables on witchcraft. Poor old Bacon, notwithstanding he left some valuable information, believed in such things, and recorded them. What would he say were he to return to the earth now? God and Nature have provided man with a clear remedy against credulity and illusions. Let him fall back on reason, and not attempt to overthrow the laws of Nature; in doing so he defaces the image of God placed on him, though I admit we are bound to reject the mistakes of our forefathers. Bacon made many, but the assembly at Bath made far more glaring ones, and the age they are living in.

To gain proceed with the granite formation. I have to notice what is about its average assay—first, silica, 60 per cent.; felspar, 30 per cent.; mica, 14 per cent.; and schorl, 6 per cent. These trace, with other substances, the supply of silica to the ocean as abundant—said in places to be as much as 15 per cent.; and it never lacks silica to reform any rock, were it not used up to form granite, sandstone, and near all rocks, the sea would be charged so as to become a rock of itself. If we take the assay of granite, as I have before stated, to be about its average contingents, we shall find 75 per cent. of that granite is silica, rather over the average of all rocks. If all seas were so charged with silica, there cannot be a lack of silica to form granite in any part of the world; and it is bound to fall and form granite, or some other silicious rock. It may at times, in places, become so contaminated as even to kill fish, which are slow to move. This will account for their being found in some layers in such large quantities, and in the adjoining layers few or none. We find the air at times, in certain places, got so contaminated as to require and produce lightning and thunder to purify itself. Men who live along the sea-coast must have noticed how quickly a ground sea will rise even in a calm, and roar so as to be heard for over 10 miles; they will also have noticed what is commonly called a bear-tide come in, and run up rivers like a wall, then at times a sudden tide will rise quite out of its regular time. This goes to show us that something is out of place, and we cannot account for it, or know all that is going on. All that we know is in perceiving its own work systematically, and does not require the aid of man to assist it. It is like all the other portions of God's creation, ever labouring to perform its own mighty work. Then, I may fairly ask, where was this mighty mass of water when the world was going through its fiery ordeal, and through the two thousand two hundred and ninety-eight millions of years, when undergoing its cooling process? Such a mass of fire must have sent it far away beyond the atmosphere. Then I may, without even being called presumptuous, ask if God again threw from the heavens a mighty mass of water to cool it down? Passing this for the present, I notice that if the Bath theory be right, all the granite rock must have been formed when no water existed on the earth. Then the rocks at Bath appear to be reduced to two points—the fiery and the watery theory. The fiery one I call the Bath theory, and the watery one my theory. I first give the Bath theory, where they say there was a ball of fire (I may fairly call it a sun), that worked ten thousand millions of years as a luminous orb, for the use of some unknown worlds; this, after the expiration of seven thousand eight hundred millions of years, wore out, or by some means became useless; when God, as an after-thought, supplied it with water to cool it down sufficiently deep for an habitable globe, and placed man upon it, and they say it all but a few miles is still fire. Here ends the Bath theory.

Now, I contend that the world never was a ball of fire, neither is the centre of the earth now fire. I argue that into existence a perfect structure, which has been usually run off to the surface, and much as now found. I further contend that the world is guided by laws that man may contemplate on, but many of them are very far beyond his comprehension. These, then, are the two points in contention; then it is for the world's inhabitants generally to decide as to which theory is right. I will now proceed with my own views as to the formation of granite and other rocks, remarking that granite rocks are found in every part of the world, but there are too many rocks called granite which should not be so termed; it is far too broad a name. I first take up Cornish and Devon granites, and call them genuine granites—why? because tin is found in and about that class of granite in all parts of the world, and in no other. Then the question arises as to the difference between the Cornish and other granite. Here I have to leave my work again, and charge, and even criminate, professional men. I know tin granite by the eye in any country, but I am taken by surprise when I fall back on all the supposed-to-be scientific men of Cornwall, who have lived and are living up to the present day, and neither can give a genuine assay of Cornish granite on or about productive lodes, or on the barren hills, or even a well-authenticated assay between Cornish and Scotch, Welsh and Irish granites. The practical man can tell by the eye that there is a difference between the granite on Carn Marth and Carn Bray hills, and in the sides below; Practicals know that one is barren and the other productive in ore. I say Mr. Fox would have conferred a far greater boon on the Cornish miners if he had given them and the world a true analysis of the productive and the unproductive granite of Cornwall, than he did by spending his money to detect the increase of temperature in depth. The former would have been a guide to a rising world, the latter theory is not correct; were it so it would be, like shells, of no value, and amount to nothing. No man can come to a conclusion as to why tin forms in and about this particular granite without true assays, but I will venture an opinion from what I have gathered from watchfulness and practice. I notice the silica, and even the felspar, is more metamorphic and in less crystals than in the barren rock; it always contains schorl, and a fair portion of mica, and very little lime. I have observed that where copper abounds in lodes in granite there is generally a fluor-spar, which is evidence that lime has crept in; but I seldom see fluor-spar abound in a good tin lode—that is, about a good deposit of tin. Here to me is the grand secret as to why the granites of Scotland, Ireland, and Wales do not produce tin; I say nearly all of them are charged with lime substances, in which tin will not thrive. Lead, copper, and most other metallic substances within tin granites; they should not be classed as such. I have given my opinion broadly on this subject, and now leave to our scientific school teachers and chemists to learn what they ought to have known 50 years since. Where are Messrs. Fox, Hunt, and W. Smith? I have called at their School for the past two months, but neither of them are to be found to answer me on these points. I think this enough to arouse professionals, and school teachers, and German guides, so freely lavished on us, hoping they will not leave the Cornish miner another 50 years without an analysis of every granite hill in Cornwall and Devon, and also what it is about every productive lode. I think Cornish and Devon granite runs about north-east, and at Liskeard it has a cross-bar, and again at the east end of Dartmoor. I have said before that I believe granite, and all mountain ridges, were formed in the sea and under the run of tides; these two bars may be the evidence of that. I do not object to, but will give my argument in its favour, noticing it is quite possible for two cross-tides to have acted at these points and have formed these bars. Two tides meeting would have caused such an occurrence; we see the same thing occurring in our day. I have noticed another rather extraordinary thing that might have caused these arms to form on the east end of this granite. The north and south Exmouth lode, a clay in places hundreds of feet wide; beyond this no granite is formed. The granite here throws out two arms for many miles in length, as though it could not master this clay. Then, again, at Bilton Wood, east of the arms at Liskeard, there is also a large clay cross-bed; this appears to have cut off the granite, and not allow it to pass the clay cross-bed; I have nearly a mile of it.

I have before stated that granite appears to have been under control over each other. Here the clay appears to have predominated, a thing I have also observed it to do in shifting all silicious lodes. I believe these to be two masterly lodes, that stretch from sea to sea; I think there is also one that cuts off the Redruth granite east of the hills. I believe these are the main arteries of the earth, and even shift the mass of granite. It is not unlikely that thorough examination would prove all the ends of the granite masses are formed against these lodes, these clays might have prevented granite from

forming even in the sea, as they had only to master felspar and schorl; if alumina, or any other substances, had a greater affinity for silica than felspar it was not schorl, or Granite never forms over the spot where other substances are forming. Granite is essentially forming on its own basis, it appears never to interfere or form on another rock, but many lime granites do form and overlie other rocks. The sudden turn of the tide I think sufficient to stop the formation of any rock—fact, I can see no way by which reasoning to upset the theory of all and every known rock being formed in the sea, every patch as the tide ebbed and flowed over them drew down with it the water, and tained to form their own kindred. I before said, I believe that the waters came, were in so many vats. Who will argue that granite is not now forming in the sea, but in the granite we see on the land? There cannot be a question as to granite being now forming on the north coast of Spain and Portugal, where there is so much decomposition of silica and felspar. Mica falling working into the sea must form a granite, and I stand here to argue this point. Here, I say, a coast for hundreds of miles, where all the waste is decomposed granite and vegetable matter, all passing into the sea, and then, I ask, what becomes of it, if not precipitated? All the more ponderous masses along off the coast, in or about the run of the tides; the light portions, such as vegetable matter, will swim on till it gets embayed in some still place or basin, where it finds carbon, when it will form coal. Vegetable matter may at times traverse the coast ten times the distance that the more ponderous substances do before it finds its resting place. Then, let us suppose that granite is forming. I say off Cape Finisterre; here we have Nature performing her beautiful work. Here is alumina joining iron, and silica forming crystals of felspar; then come silica, iron, alumina, potash, magnesia, and a trace of manganese, forming plate-mica; then come silica, alumina, potash, magnesia, iron, with traces of other substances, and form nodules of schorl. When all these crystals are finished, then comes on the silica, closing them all up as though it were cement. Here are all the processes of crystallising and forming granite beautifully carried out, and all without heat, further than what is required for its own chemical formation. Granite rock in mines is always a cold rock. I do believe granite is forming on the coasts of Spain and Portugal; for it is no less singular that granite the land along the coast contains about the required quantity of substances to form granite. Here is Nature performing her work with every tide. Then a quarry where as to its precipitating with the ebb and flow of the tide, or only one way; or, maybe, the crystals form one way and the silica closes it up the other way. This may be aided on by electricity and polarity. I say, where is the man who studies Nature that can help admiring her wonderful work? See how Nature is laid out all through God's creation; the work never ends; it is the same to-day as yesterday, and for ever.

I may notice that I believe granite crystallises in mountains in the desert. I say let man figure in his mind a swarm of bees pitching, and forming, as they do, a hive, and I think we have the emblem of a granite hill forming. As a hint for J. Jones, say if granite were thrown up from volcanic eruption, what prevented the liquid lava from overflowing some of the other rocks? The reason granite is not stratified is its continual action; stratification arises from stoppages and changes when in the act of forming. The causal joint in granite occurs from temporary stoppages, or a portion giving ready to ask where the substances come from to form felspar, lime, and mica, &c., in such quantities as are found? My answer is, that all rocks were first formed from gases, and the different rocks now seen by man are nothing more than first formed combined in different portions by the continual decomposition of rock daily taking place; this all goes to the ocean, and again unites to form new rock. The mass of the rocks forming is dependent on the substances present to form them. The earth works under its own elementary laws; it re-forms all that come to it, whether it be rivers or air, using its water and gases, that come up from rocks under, to aid when required. There can be no deficiency of matter to form granite, felspar, lime, or any other rock to the extent required. Nature lacks nothing, not even matter to form vegetables or animals, and she carries on her work unceasingly under the laws which God laid down for her. I believe the world was made a finished structure, for man's guide, as the emblem of wisdom and beauty.

I shall, in future letters, again refer to many other rocks and their formation. I shall next take up Lodes and Faults.

N. ENNOR.

## MINERAL DEPOSITS OF CARMARTHENSHIRE.

SIR,—I did not think of troubling you again, had I not been obliged to do so in consequence of there having been so many articles of late written on this subject. I now take the opportunity of writing in my own defence, and with the hope of supporting those gentlemen who have been so liberal as to assist the proprietor of the lands in opening this mineral property; and, as I have inspected this mine and reported on it, I can by no means let the subject drop, as the letters of Capt. Waters, "J. A. T." and "H." compel me, as a man of truth, to come forth in the open field, and prove that my report is founded on fact. First, I will call your readers' attention to my report, which appeared in the Journal of July 9, in which I endeavoured to describe the nature of the lodes and the composition of the rock in which those lodes are embedded, which I contend is soft clay-slate, and not shale or sandstone. Secondly, I beg to call your attention to the letter of Capt. Waters to Mr. Hodgop, in which he states things that are contrary to common sense, as he says he has been within four miles of the mine, and advises Mr. Hodgop not to invest in it; but he cannot say whether it is in the metalliferous range or not, which I contend it is. Capt. Waters, with a map in his hand, ought to have been decided on that point, as every mine-agent ought not only to have one in his hand, but one in his brains. I cannot understand his treatment towards the proprietor of the land, as professing to be a friend of his; neither do I understand the import of his letter in the manner he wrote Mr. Hodgop respecting myself. I now ask him as a man to meet me fairly on the field of discussion, and I am prepared to prove to him and the mining world that the Talbach sett is second to none in Carmarthenshire, and that it contains in itself all the elements of success, as there are to be found on the lands of W. G. S. T. four large and well-defined east and west lodes, and two large flooken north and south lodes, embedded in a beautiful soft clay-slate, which can be seen in the cutting near the Llanpumpant station, from 20 to 30 ft. in height. Surely, a spirit of self-interest must have actuated Capt. Waters in writing the letters to Mr. Hodgop. Thirdly, I will call your readers' attention to the article signed "J. S. T.," in which he pronounces the mine to be worthless, contending that it was not clay-slate, but shale, sandstone, and spar; but, in the face of "J. S. T.," I deny the existence of either, as there is not a particle to be found in the sett, nor near it. I also, in my report, alluded to the ample supply of water to command all the machinery in work. The writer made some remarks as to the worthlessness of water, which I contend is a great advantage to any mine. I would further add that the water from the branches in the sett is highly mineralised, and of such a description as to ensure certain success. Fourthly, I would call attention of your readers to the letter of a person signing himself "H.," writing under the cloak of deception, trying to vindicate Capt. Waters, and speaking in a derogatory manner respecting the proprietor, while I feel it my duty, if possible, to defend him, as I ought to do, as he has not only willingly granted his lands for mining purposes, but has nobly assisted in opening up the lodes; therefore, as a miner, I feel it my bounden duty to support him in this matter. In order to bring this controversy to a close, I now ask, as a disinterested person, those parties who have written to the Journal to meet me fairly on the field, and let us prove that neither Capt. Waters, "J. S. T.," or "H." have done their duty as men to their employers or country. I shall be more than happy to meet any gentleman on the ground, as I have pronounced it to be one of the best pieces of mining property in South Wales, fearing no contradiction.

Oct. 6.

## CARMARTHEN MINERAL DEPOSITS—TAIBACH MINE.

SIR,—We the undersigned consider it our duty towards the proprietor of the Talbach sett to give our unqualified contradiction to the following statement contained in the letter which appeared in the Journal of Sept. 24, signed "H.,"—"These local contributions failed because the results were not satisfactory." To the foregoing, we reply that the results were highly satisfactory, taking into consideration the improved indications obtained, and as shown by the specimens lately forwarded to your office; but, as hand-labour was no longer of any avail in further testing the lodes below the shallow depth already attained by means of the adit level, from which the water was drained, we thought it best to surface the rivet, we thought, under these circumstances, the wisest course was to bring it before the public, towards the settlement of the sett and properly developed.

DANIEL BENJON DAVIES, DAVID DAVIES,  
J. HARRIS DAVIES, CHARLES THOMAS,  
WILLIAM HARRIS, J. A. TIDHMS,  
DANIEL DAVIES, JAMES N. BUCKLEY,  
D. E. LEWIS, HENRY P. G. BROOK.

ANCIENT MINING MACHINERY.—An ancient mining wheel, upwards of 20 ft. diameter and 1 ft. 6 in. breast, of considerable interest to mining antiquaries, has recently been exhibited at the Academy of Arts at Mézières, at Paris, by Mr. A. Sanson, who reports that it was discovered in a Portuguese mine, and was doubtless employed by the Romans to raise water in the operation of draining the mine. It is well known that the hydraulic works of the Romans surpassed in extent any of those of modern times. As that great people had not the use of either steam or gunpowder, they were sometimes obliged to raise water over a ledge where modern engineers would carry it right through. In some of the mines of San Domingos they make adit levels nearly three miles in length, but in some places the water was raised by wheels to carry it over rocks that crossed the drift. Eight of these wheels have recently been discovered by the miners and are now working the shaft of this mine. These wheels are made of wood—the arbor and spokes of pine, and the axle and its support of oak, the fabric being remarkable for the lightness of its construction. It is supposed that these wheels cannot be less than 1450 years old, and the wood is in a perfect state of preservation, owing to its immersion in water charged with the salts of copper and iron. From their position and construction these wheels are presumed to have been worked as treadmills, by men standing with naked feet upon one side. The water was raised by one wheel into a basin, from which it was elevated another stage by the second wheel, and so on for eight stages.

TREATMENT OF AURIFEROUS ORES.—As every proposition for the economic extraction of gold from the matrix which contains it is at the present time particularly interesting, we subjoin a description from the *Scientific American* of the chlorination process, which is founded upon the convertibility of gold into a chloride by the agency of chlorine gas, and the solubility of this chloride in water. The pulverised and washed ore, which contains the gold in its metallic state, is put moist into vessels that are provided with bottoms, under which chlorine gas, carefully freed by washing from any admixture of hydrochloric acid, is introduced. Percolating upwards through the ore, the gas converts the gold into chloride of gold. As soon as the free chlorine begins to escape above the supply of gold is stopped, and the soluble chloride of gold extracted by leaching the ore with warm water. The solution is then collected in suitable vessels, and the gold (after the free chlorine has been expelled by heat) is precipitated, either in the form of a sulphuretted metal, or in the metallic state (as a brown powder) by the addition of sulphate of the peroxide of iron. Insufficiently washed ore, previously saturated therewith, or an acidulated solution of chloride of lime, may be employed. This process admits of a complete extraction of gold, if the character of the ore favours its application. From a pecuniary point of view, its applicability depends greatly upon local conditions. The presence of large quantities of base metals in the ore, especially copper ore (which is the case in Colorado ore), causes great waste of the expensive chlorine gas, since all the copper must be converted into chloride before the gold can be secured. The ingredients used for the production of chlorine are sulphuric acid, black oxide of manganese and salt, or hydrochloric acid and manganese. When these materials can be cheaply obtained, this process would undoubtedly be profitable for silicious ores containing too much base metal. At Reichenstein, in Silesia, refuse ore, yielding but 10 to 20 grains to the hundredweight, have indeed been treated advantageously by this process. But its adoption in our western territories—even if the character of their ores were more favourable to it—would present a widely different economical question. It may be asked, why not manufacture the regular sulphuric acid on the spot in connection with the roasting of the ores, whereby an abundance of sulphur



On vapours are produced, from which, by higher oxidation, sulphuric acid is formed? In a well-ventilated country, where metallurgy was an established profession, it would be considered folly to despoil the pyrites ore, and not turn the sulphuric vapours to account in the manufacture of sulphuric acid, but it would be equally folly to attempt such a thing in the early days of the territory of Colorado. If the costliness of leaden chambers and other necessary apparatus, and the great scarcity of capable workmen, be taken into account, the success of such an undertaking appears problematical. These economical conditions are sufficiently unfavourable to discourage metallurgists from attempting the process of chlorination in Colorado; but the greatest objection to its use is the inevitable sacrifice of health and life entailed upon those who engage in it. It will be practically impossible to protect the workmen in any extended operations under this process from the poisonous effect which is produced in the human system by the inhalation of chlorine gas.

### ON THE THERMAL WATERS OF THE CLIFFORD AMALGAMATED MINES, CORNWALL.

BY WASHINGTON SMITH, M.A., F.R.S., SEC. G.S., CHIEF INSPECTOR OF CROWN MINES.

The attention of the British Association has been called by Sir Charles Lyell to the phenomenon of springs of water at a very high temperature, which were discovered a few years ago in one of the deepest of the Cornish copper mines. Prof. Miller's recent investigations have proved in those waters the existence of the new metal cesium, and of an unexampled proportion of another of the rarer metals, lithium, now coming into use as a medicine, and have thus added a fresh interest to a topic of high scientific importance.

In the neighbourhood of Redruth, and situated mostly in the parish of Gwennap, is a district equally remarkable for the high temperature of its deep mine-workings, and for the enormous value of the copper ores extracted from them within the last half century. The constituent rock of this region, is mostly the clay-slate, or kila, which, abutting against the granite dome of Carn Mark, dips away from that hill towards the east, and has not been unbottomed in the deepest mines about to be mentioned, although there can be no reasonable doubt that the granite would be found occurring again beneath it. The clay-slate is intersected by dykes of elvan or granitic-porphory, coursing in an east and west direction; by lodes or mineral veins having, on the whole, a very similar line of strike; and by cross-courses, or non-metallic veins, running north and south. The more notable mines of this district have been Poldice, Wheal Jewell, Ting Tang, Wheal Squire, the Consolidated Mines, the United Mines, and Wheal Clifford, worked with various success to depths of from 1000 to near 1900 feet from the surface. Certain of them are at present in abeyance, 1000 to near 1900 feet from the surface. Certain of them are at present in abeyance, 1000 to near 1900 feet from the surface. Certain of them are at present in abeyance, 1000 to near 1900 feet from the surface.

It is above a quarter of a century ago that a valuable series of observations on the temperature of the water of mines in Cornwall was made by Mr. Wm. Jory Henwood, F.R.S.; and his exact tables of statement and deduction showed the Redruth district to be one of the most remarkable for the high temperature, in its deep working places, of the waters, whether issuing from the lodes or from the enclosing rocks. Thus, at Poldice, about a mile north of the United, and upon parallel lodes, the water flowing out of the lode at 154 fms., or 1104 ft. deep, exhibited a maximum temperature of 100° Fahr.; at the Consolidated Mines, at 294 fms., or 1764 ft., the water in the bottom of a level in the south branch of vein was 90°; at the United Mines, in the western part, or Poldice, a large gush of water from the elvan course at 184 fathoms, or 1104 feet, reached 90° Fahr. In the eastern portion of the United Mines, called Ale and Cakes, a moderate spring flowing from the rock between the great south lode and the old lode, at 195 fms. deep, showed a temperature of 99°. A stream cut in the rock at 235 fms. deep, the great south lode, in the eastern end, or 1360 fms., or 8400 ft., deep, was 95°. Henwood's last work, which the subsequent springs of this district attained, at these considerable depths, at many points, a temperature higher than was consistent with the increment usually allowed for a given increased depth from the surface.

In the year 1839, a perpendicular shaft having been sunk to a greater depth than that at which the old lode of the United Mines had hitherto been worked, a cross-cut was driven from it at the 180 fathom level (about 225 fms. deep), which intersected the vein at a spot about a quarter of a mile further west than the points at present in operation; and here a large feeder of water was encountered, of so much higher a temperature than had before been observed, that it was at once termed a hot spring, and the lode the "hot lode." A splendid course of copper ore rewarded the spirit of the adventurers, and has been followed up eastward and downward ever since.

The shaft being deepened by successive stages, it has been found that at each deeper point at which the chief flow of water has been seen it has been prevented by the excavations from rising further upward, and has shown a marked accession of temperature. In 1855 it found it welling up abundantly from a fissure extending along the north wall of the lode, at about 1510 ft. from the surface, with a temperature of 114° Fahr. At a rather greater depth, in a cross-cut driving to meet the vein, although the air was almost intolerably stifling, the temperature of the water was several degrees lower, because the main stream had not yet been intercepted. In July last these parts of the workings and the lode were fairly laid upon them; but as the ore by degrees gets worked away, and the excavations remain exposed for months and years to a powerful current of wind brought in through the 208 fathom level, the temperature decreases, and an average of 85° is what miners consider the cool air of their resting places in the 220 fms. level. Although 122° was the highest degree of heat which I observed, I think it highly probable that when the hotter level, the 122, is advanced a little further eastward the temperature will be found in the chief gush of water somewhat higher.

The circumstance of the hot springs being attendant upon the rich and cindery-looking, loose-textured, coarse of ore has induced many to look for the cause of the high temperature in the decomposition of the pyrites; but the absence of sulphates of copper and lead in the water, and the fact that where most exposed to oxidation, nearer the surface, the rich lodes never exhibit phenomena so remarkable, appear sufficiently to set aside such a hypothesis. We shall, therefore, have to look to deep-seated sources of heat, such as have been adverted to by Sir C. Lyell in his address, for a more probable explanation of the observed appearances. The amount of water delivered from the Clifford spring is estimated at 150 gallons per minute, and since analysis proves it to contain a large proportion of chloride of sodium, whilst all the depths above mentioned as below the adit are, with a deduction of 10 or 12 fms., below the sea level, the suggestion has been thrown out that the influx is derived directly from the sea; but the very large percentage of magnesium in the water, which is not less unfavourable to such a view, and the position of the group of mines is not less unfavourable to such a view.

The flow of the water takes place with most facility, it would appear, along the strike of the lode, E.N.E. and W.S.W. by the true meridian; a direction in which the vein is retained inland, dying out after a time eastward, and passing westward through Wheal Squire and the Ting Tang Mines into the granite of Carn Marth. In the middle of this run, at Poldice, it is intersected and heaved by numerous cross-courses; but these, although offering tolerably free passage to water, appear never to have yielded it to a remarkably high temperature. The elvan or porphyritic dyke, which, coursing parallel with the lode, for some time laid parts brought into such a position as to form one of its walls, seems not to have any necessary connection with the high temperature of the water. For the understanding of the phenomena of these thermal waters the following circumstances deserve attention. They appear to have been found only on the workings attaining a certain depth, above which they were prevented from rising in large volume, and at their exceptionally high temperature. This may be accounted for, partly by the closer texture of the lode, which was small and poor above that level; and partly, as appears probable, by the diffusion of the waters over a large area—certainly along this line of lode, if not extending to others of the neighbouring lodes, where hot water has been cut at medium depths. The very hot spring cut at Poldice, as mentioned above, can hardly be said to be the Clifford, since between the two mines are situated the Consolidated Mines, which were worked to a greater depth than either, without intercepting it. Along the old or hot lode, however, it is about one mile from Poldice to the present ends in Wheal Clifford, throughout which distance exceptionally hot water has been cut at intervals; and the principal outlet has travelled a quarter of a mile eastward in the last 20 years. A comparison of the temperatures at equal depths in the 10 different districts tabulated in Mr. Henwood's Table II., establishes the curious fact, that at a shallow horizon, down to about 100 fms., the Redruth district exhibited a lower average than the mean of the whole, and only on getting below 150 fms. took the lead of the others.

As regards the increment of temperature, it is somewhat startling. Between my last two visits, made at an interval of nine years, on both of which I carried down trustworthy thermometers, the point of issue of the hottest water had been deepened 30 fms., or 180 ft., and the temperature was increased by 8° Fahr. This would give 1° for 22½ ft.; whilst a comparison with Mr. Henwood's observation at Poldice would give a much higher ratio, 1° for 16 feet. The same uniform rate of increase would bring us to the boiling point of water at an additional depth of from 1440 to 2000 ft. The facts are thus so full of interest, physical as well as chemical, that it is to be hoped the commercial success of the last increase of depth may be great enough to lead to a further advance into the deep.

It is worthy of observation that in parts of some of the deeper levels the elvan is found to form one wall of the lode, whilst kila encloses it on the opposite side; whence it is perfectly clear that the formation of the vein fissure was accompanied by a dislocation of the rocks through which it passes.

### ANALYSIS OF A HOT SPRING IN CLIFFORD AMALGAMATED MINES.

BY PROF. W. A. MILLER, M.D., VICE-PRESIDENT R.S.

For the water with which the following analyses were made I am indebted to the courtesy of Mr. Horton Davey, who, at the request of Sir C. Lyell, forwarded it to me in London. This hot spring is the most abundant source of lithia at present known, the proportion of this salt per gallon being eight or ten times as great as that of any spring hitherto examined. The quantity of chloride of lithium furnished by it, taking its flow at 150 gallons per minute, at which it was roughly calculated by Mr. H. Davey, and the amount of chloride of lithium at 26 grains per gallon, would not be less than 800 lbs. in the 24 hours. The existence of cesium in quantity somewhat considerable for an element hitherto so rare adds to the interest with which this water will be regarded. I have not as yet attempted to estimate the amount of cesium contained in the water. Lithium has been in some cases employed medicinally, but its high price has hitherto restricted its use. The discovery of a new and practically inexhaustible source of supply will, therefore,

no doubt, be hailed with satisfaction both by chemists and medical men. Extraction of the alkali on a large scale would not be difficult. For this purpose the water must be concentrated to about one-twelfth of its original bulk, or until it acquires a specific gravity of 1.080. To the boiling liquid a concentrated solution of carbonate of sodium must be added so long as it produces a precipitate. A copious granular precipitate, consisting chiefly of carbonate of calcium, but carrying with it a little carbonate of lithium, is speedily deposited. The clear liquid must be decanted, mixed with sufficient hydrochloric acid faintly to redden litmus, and then boiled down; it contains only alkaline chlorides. Part of the chloride of sodium must be crystallised out, and on adding carbonate of sodium to the concentrated brine impure carbonate of lithium will be deposited. The mother liquor still retains the salts of cesium, and these may be separated by the addition of perchloride of platinum, following exactly the method given by Hansen and Kirchhoff (*Phil. Mag.*, Nov. 1861). For particulars respecting the geological features of this remarkable hot spring, the reader is referred to the paper of Prof. W. Smyth, *King's College, London, Sept., 1864.*

Temperature of spring, 122°-123° in 230 fms. level; average yield, about 150 gallons per minute; specific gravity at 60° Fahr., 1.007. Grains.

Fixed salts on evaporation, in grains per imperial gallon	646.1
Consisting of—	
Chloride of potassium with a little chloride of cesium	14.84
Chloride of lithium	28.06
Chloride of sodium	563.61
Chloride of magnesium	8.86
Chloride of calcium	216.17
Sulphate of calcium	12.27
Silica	8.65
Total	645.45
In 1 imperial gallon the gases amounted to	8.91
Consisting of—	
Carbonic acid	1.89
Oxygen	1.72
Nitrogen	6.30
Ratio of oxygen to nitrogen gas	1:3

—Mining and Smelting Magazine.

### FOREIGN MINING AND METALLURGY.

The last advices from St. Dizier state that the general air of the market is better; affairs appear more sustained, and prices have a more easy tone. Charcoal-made pig sustains its price at 44. 14s. per ton, while that produced with an equal mixture of charcoal and coke has made 31. 16s. per ton. The orders received for iron have been tolerably satisfactory; the more ordinary price is 91. per ton; the quotation of 81. 16s. per ton is only exceptional. According to some statistics which have been collected, it appears that the number of blast-furnaces in the Haute-Marne remained the same last year as in 1862—that is 77. The production, which in 1862 showed an augmentation of 18 per cent. upon preceding years, was a little higher in 1863, and the approximate totals collected for the first half of 1864 show a further increase. There are now in the district, as compared with 1862, eleven rolling-mills, the production of which is now about 25 per cent. above that period. The forces maintain their position with some difficulty; their number is reduced to ten. Thus, notwithstanding all the grumbling in which the Haute-Marne has indulged, its metallurgical industry still appears to be making progress. The fall indicated at once by the iron market has greatly discouraged industries as for a long time past the price of pig has not been so low in that district. The price of 61. 16s. per ton, first mark, delivered at the railway or at the purchaser's, is equivalent to 61. 8s. per ton on the part of the seller. In 1848 the price of pig iron to 61. 8s. per ton, but the transport was effected at the charge of purchasers, so that the present price is much below it, especially on account of the augmentation which wood and labour have experienced since that period. The price of 61. 8s. per ton is too much below the return price to admit of the fabrication of pig in the Franche-Comté being sustained, and several establishments are mentioned as likely to swell the list of extinguished works as the Haute-Marne has exhausted its supplies which they have on hand. The coke of the Mons basin has found its only outlet in the Haute-Marne; it is sold at about 11. 5s. per ton, which, deducting transport expenses, leaves 16s. per ton to the proprietors of coke furnaces. Transport by railway is preferred to that by navigation, even although the principal charge may be higher, because the difference is more than regained by questions of detail. These considerations induced the Council-General of the Haute-Marne to express a wish that the Government would concede a line uniting the Belgian collieries to the Marne forges. A similar vote was adopted by the general council of the Nord, and it may be presumed that the Government, convinced of rapidly-developing French siderurgical industry, will not fail to regard with favour the applications of two important general councils.

The Belgian metallurgical markets show the same firmness in prices; abundant orders also continue to be received. At Charleroi refining pig for hard iron has made 31. 6s. to 31. 8s.; ditto, for soft iron, 31. 3s. to 31. 2s.; speckled pig, hard iron, 31. 8s. to 31. 10s.; pig for fine-grained iron, 31. 16s. to 31. 18s.; steel pig, 31. 16s.; casting pig, No. 1, 41. 6s.; ditto, No. 2, 41. 4s.; ditto, No. 3, 41. 2s.; ditto, No. 4, 41. 0s.; ditto, No. 5, 31. 18s.; charcoal-made pig, 61. 6s.; pipes, 61. 6s. to 61. 7s.; rolled iron, No. 1, mixed, 71. 0s.; ditto, No. 2, slightly hard, 71. 12s.; ditto, No. 3, hard iron, 81. 4s.; ditto, No. 4, 81. 16s.; rails, 61. 16s. to 71. 0s.; hammered iron, first-class, 101. 12s. to 101. 16s.; ditto, second-class, 111. 16s. to 121. 0s.; ditto, third-class, 121. 0s. to 121. 16s.; ditto, first-class, 71. 8s.; ditto, second-class, 11s. to 12s.; ditto, third, 101. 12s. to 101. 16s.; ditto, fourth, 111. 16s. to 121. 0s.; plates of commerce, 2 to 2½ mill, 91. 16s. to 101. 0s.; ditto, 1 to 1½ mill, 101. 12s. to 111. 8s. At Liège refining pig, hard iron, has made 31. 10s. to 31. 12s.; refining pig, No. 2, 31. 18s.; speckled pig, 31. 6s.; grey refining pig, 31. 10s. to 31. 12s.; casting pig, No. 1, 41. 2s.; ditto, No. 2, 41. 0s.; ditto, No. 3, 31. 18s.; ditto, No. 4, 31. 16s.; ditto, No. 5, 31. 14s.; rolled iron, No. 1, 71. 4s.; ditto, No. 2, 71. 16s.; ditto, No. 3, 81. 8s.; plates, No. 3, 101. 8s.; ditto, No. 2, 91. 12s.; ditto of commerce, coke-made, 121. 8s.; ditto charcoal-made, 161. 8s. per ton. After October 1 several treaties of commerce concluded by the French Government with England, Belgium, and Italy, Jan. 25, Oct. 12, and Nov. 16, 1860, May 1 and 12, 1861, and Jan. 17, 1862—received their entire application, and several further reductions of Customs duties took place. Thus the duty on pig was reduced from 11. to 10s. per ton, and other articles in proportion; the duties levied are still, however, very considerable. The duties on works in metals are reduced in proportion to the reduction which the matters from which they proceed enjoy.

The position of the Belgian coal trade has become worse for several years past instead of improving. It is now seriously considered essential to find a remedy for this downward course of affairs, so prejudicial to the interests both of the considerable population engaged in coal mining and of the coal engaged in its workings, which is scarcely remunerated, and as regards some of it not preserved intact. The results obtained have not responded to the hopes of the coal trade, the Belgian production is exuberant. After a temporary activity in 1855 and 1856, which was erroneously regarded as of a permanent character, the means of production were increased much more rapidly than the demand was developed; and embarrassments consequently soon appeared. The Belgian industrialists had then to choose between two alternatives, either to reduce the production and render it more in accordance with the actual state of the demand, or to continue to extract coal with the same activity, at the same time diminishing the return price and the selling price, thus developing the demand at some sacrifice. This latter course obtained a preference among almost all the Belgian collieries. The results obtained have not responded to the hopes formed. France, which has for so many years been a very important market for Belgian coal, no longer supplies itself with Belgian coal exclusively, but purchases also Prussian coal, and that which the basins of the Nord and the Pas-de-Calais now furnish, although these two latter sources of supply were scarcely known some 10 or 15 years since. It is thus impossible to deny that at present at least coal-mining industry is in a suffering condition in Belgium, and it is against this state of things that efforts will now probably be made. These efforts are, in fact, now being put forth, but scarcely with sufficient activity. One of the principal means to be employed for giving renewed activity to the Belgian market would be the discovery and development of new outlets, and as a secondary consideration a maritime export trade deserves most serious consideration, as it is a vast unexplored field which may probably be opened out. A special commission has been formed under the auspices of the Government, charged with the task of examining the principal points, so as to attain a maritime export trade on favourable conditions, such as the question of tolls, the installation of ports, &c. This commission is composed of MM. de Broeckere, Sabatier, Moncheur, Muller, Jouart, De Rongé, Van Iseghem and Jacquemyns (Members of the House of Representatives), Michels-Loos (Senator), Sauleyette (Secretary of the Mons Chamber of Commerce), Wautlet (Secretary of the Charleroi Chamber of Commerce), Wellens (Inspector-General *ad interim* of the Corps of Bridges and Roads), and Doucker (Sub-Director at the Ministry of Finance). Private enterprise does not remain inactive in Belgium, and it is stated, likewise, that a steamer is now being loaded at Antwerp for Constantinople, which is to carry 600 tons of coal. This fact does not, perhaps, count for much by itself; but it is important if it is considered as the prelude of a new phase to be traversed—the search for new outlets. During the last few days the position of the Belgian coal trade has not improved, but remains as last reported. Competition, the result of a production not presenting a due ratio to the demand, unhappily makes itself felt, and the slight animation which is remarked at this period, when the laying in supplies for the approaching winter usually commences, improves in no respect the position of industrialists. The advices from Charleroi state that tolerably sustained orders can still be secured only at very feeble rates. The Trieu-Katsin Colliery Company concluded a contract a few days ago for 12,000 tons of galiletries to be furnished to the hospitals of Paris. At Liège coal remains stationary; but the enjoyment of a new outlet is shortly hoped for. Thus, dating from Jan. 1, 1865, the import duties levied on the admission of coal into Prussia, which are about 2s. per ton, will be reduced to one-fourth, and will be completely suppressed in 1865. Thanks to the monopoly which they enjoy, the collieries in the neighbourhood of Aix-la-Chapelle make consumers pay very dearly for coal, and it is expected that a certain district bordering on the Belgian frontier will be glad to receive Belgian combustible. From Mons a fair amount of activity is reported, and the stocks on hand have been sensibly diminished; they still amount, however, to about 2,000,000 hectolitres. Freighters are rather high, and boats have made default to some slight extent during the last few days. On the railways, also, there is an insufficiency of plant; but this state of affairs appears frequently at certain periods of pressure. Notwithstanding the animation which has prevailed at Mons, quotations remain feeble. During the first seven months of 1864 the deliveries of coal and coke from the Coucharat de Mons have been 1,575,665 tons, against 1,492,160 tons in the corresponding period of 1863.

There has been no important movement in the foreign copper markets. At Paris, however, prices have been tending downwards, English having been quoted at 961. 8s.; United States, Lake Superior, at 1084.; Chilean, at 884.; and Corcoro mineral, at 921. per ton. At Havre rather sustained sales have taken place of Chilean, in bars, at 871. to 871. 10s. per ton, at which latter price the demand continues. A lot of 5 tons of old copper of recent importation has also realised 901. 8s. per ton for red, and 861. per ton for yellow. There has been no business doing at Antwerp; the arrival is announced of a supply of American from New York; this lot is held at 121. per ton. On the various German markets affairs have been very quiet, all at Hamburg prices have been nominal, and at Berlin purchasers refuse to pay the high prices at which the various qualities of foreign copper are held, so that affairs at present are not very active; at Cologne and Stettin there has been little business, and prices have been unchanged. The tin markets continue quiet. On the Dutch markets little business has been done; for Banca 601s. to 60½ fs. have been paid. The article is comparatively neglected at Paris, Banca having made 1081.; Detroit, 1061.; and English, 1071. per ton. The article has been long neglected on the Havre market, but has revived of late to some extent, in consequence of the sale of 350 mamma of Banca at 1061. 4s. to 1061., and 800 mamma of Detroit at 1051. 4s. per ton. In conse-

quence of the unfavourable advices received from abroad, prices have displayed a downward tendency at Hamburg. Cologne and Stettin show no change. At Paris previous rates for lead have been maintained, without change. At Rotterdam, Stobberg lead is a list has been offered, at 11½ fs.; other descriptions without change. The Cologne market has been heavy, and at Hamburg there has been comparatively little enquiry, the news received from Transatlantic countries not being calculated to encourage operations of any importance; sales have been confined to small lots, to meet the requirements of consumption. At Berlin, Tarnowitz lead has been held well. The situation of the zinc trade is less favourable; in presence of the high rate of discount, speculation, which had maintained the market for several months, and given it an exceptional activity, has become nearly impossible. For several days past a persistent calm has prevailed upon the principal German markets, and prices have been generally established in favour of purchasers. Rough Silesian zinc has been held nominally at Paris at 24. 8s. per ton. Affairs have been inactive, and no transaction of importance has been reported; ordinary markets have been rather feebly held. At Cologne prices have been nominal.

### Meetings of Mining Companies.

#### BEARIZ TIN STREAMING COMPANY.

A special general meeting of shareholders was held at the offices, Siselane, on Tuesday, Mr. EDWARD HENRY PEMBER in the chair. Mr. ALEX. STRACHAN (the secretary) having read the notice convening the meeting.

The CHAIRMAN said the present adjourned meeting was simply for the purpose of taking into consideration the most expedient means to be adopted for the raising of capital adequate for the further development of the mines. As shareholders were aware, it was decided at the last meeting that the mines should be carried on, and, therefore, the only question now to be determined was as to the best means whereby the capital could be raised. The directors had carefully deliberated upon the question, and it was clear to them that one of two alternatives must be adopted. The first alternative was to borrow money, which, in the present state of the money market, was absolutely impossible; and the second alternative was to effect such an alteration with regard to the conditions upon which the last new shares were created as to make them more attractive. For obvious reasons the directors had determined upon recommending the latter course, but still there remained the question as to what should be the character of the alteration, or, in other words, the extent to which they ought to increase the preferential privilege, for while, on the one hand, it was absolutely necessary to make those shares possess some advantage as to render them attractive, yet, on the other hand, it was the duty of the directors to take care not to go so far as to make the original shares comparatively valueless. It would be very injudicious for the directors to propose a resolution that new shares should be created bearing such a preferential dividend as would permanently and seriously affect the original shares; but even in that case, they would be offered in the first instance to the original holders. It was not, however, their intention to make any such proposition, but the board had thought whether it would not be advisable to increase the amount of the preferential dividend agreed to be paid upon the preferential C shares, which were offered to the proprietors some months since. They proposed to create new shares, to be in substitution for the 10,000 preferential C shares, which were created in January and February last; and the new shares proposed to be created would entitle the holders to a preferential dividend of 10 per cent., and also to a further dividend *pari passu* with the original shares. In fact, after the 10 per cent. was paid upon the new preference C shares, the remainder of the profits available for dividends would be divided *pari passu* among the ordinary and the preference C shares; and in the event of a distribution of the assets the holders of the C shares would be entitled to be paid their part and their interest up to the date of such distribution, and to any arrears that might be owing upon such shares. It was further proposed that no more of the original preference shares should be issued, and that those who had subscribed for those shares should be allowed to exchange them for the new preference C shares. It might be thought by some that the more simple way to have brought about this proposed change would have been to pass a resolution to the effect that the 5 per cent. preference dividend agreed to be paid upon the original preference shares should be altered to 10 per cent., and such a course would have been adopted had there not existed some technical objections, but the plan now suggested by the directors would amount precisely to the same thing in the end. Of course it would be necessary to convene a special meeting for the purpose of passing the proposed resolutions. He need hardly say that it would be most suicidal to allow a property so admittedly valuable to pass from their hands just for the want of 2000l. or 3000l. to carry it on; and while he expressed a hope that the shareholders would do their best to take up their proportion of the new shares, he might mention that the directors had already subscribed for their proportion.

Mr. T. G. TAYLOR enquired the value of the present assets of the company? The CHAIRMAN said that the assets consisted of the plant and property in Spain, and the ore at the mines and in England; and there was uncalled-up capital amounting to 2s. 6d. per share. Mr. TAYLOR asked the value of the unsold metal and ore? The CHAIRMAN said there were about 4 tons of metal, which, at 1101. per ton, would realise 4401.; the value of the ore on its way to England was estimated at 3001. Captain Bray estimated the plant and machinery at 30001., which was about half its original cost. And the liabilities up to September 20 amounted to 5121.—Mr. TAYLOR enquired the present number of shareholders and the number of the A shares?—The CHAIRMAN said there were 77 shareholders and 17,000 A shares.—Mr. TAYLOR asked if the directors were unanimous in recommending that the preferential capital should be raised?

The CHAIRMAN said that either money must be raised or the property abandoned. By the judicious expenditure of some 2000l. or 3000l. there were good prospects of success being realised, whereas if the latter course were adopted the shareholders could not expect any return. He might mention that none of the directors held less than 500 or 600 shares; in fact, they held among them nearly one-half of the shares of the company. He might also state that from the commencement of the concern the directors had not received a sixpence for the services they had rendered.

Mr. J. WALKER, in reply to a remark from Mr. Taylor, stated that Capt. Bray still maintained that, although streaming at the Beariz Mine could not be conducted with profit, yet there had been uncovered at that mine sufficient clay to enable the property to be worked profitably for at least three years, and Capt. Bray considers the Corpio mine well worth at least 50,0001. It was under these circumstances that the directors considered it would be most injudicious to abandon such a property, whereas by a small additional expenditure of capital in the further development of the property the most successful results might be realised.

Mr. F. WILKINSON enquired what the Corpio Mine had been proved to be a valuable property?—Mr. J. WALKER said that Capt. Bray had stated that the Corpio Mine had produced to the former proprietors thousands of pounds worth of ore from what might be called surface workings. Capt. Bray was now putting out cross-cuts, &c., at the different levels, where at some parts the lodes were worth from 101. to 1001. per fathom.—The SECRETARY, in reply to a question, stated that Capt. Bray had not recently been stamping much, in consequence of the want of water, but that in about two months hence they would in all probability be returning 2 or 3 tons of tin per month from the clay, and probably a similar quantity from the Corpio Mine, in which case more than the whole of the expenses would be covered.

The CHAIRMAN said that the directors had decided to create 10,000 new shares, in substitution for the 10,000 preferential C shares, created at the meeting of the company held on Jan. 18, such new shares to entitle the holders to a bonus or preferential dividend of 101. per cent. per annum, in preference to any dividend to the ordinary shareholders, and also to a further dividend *pari passu* with the ordinary shareholders, and in the event of a distribution of the assets of the company, that the holders of the new shares shall be entitled to be paid in priority their capital and the 10 per cent. bonus, or preferential dividend. That the holders of preference C shares be at liberty to exchange their shares for the new shares, and that the directors be at liberty to take the necessary steps for carrying this recommendation into effect.—The resolution was put, and carried unanimously.

The CHAIRMAN mentioned that it would be necessary to hold two special meetings—one for the purpose of passing the proposed resolutions, and the other for confirming them.

A vote of thanks to the Chairman terminated the proceedings.

#### LINARES LEAD MINING COMPANY.

The half-yearly general meeting of shareholders was held at the offices, Queen-street-place, on Thursday, Mr. CHARLES MORRIS in the chair. Mr. J. B. COLOGAN (the secretary) read the notice convening the meeting, and the minutes of the last were approved.

The report of the directors stated that the profit for the half-year ending June 30 last was 45041. 10s. 1d., being an increase upon the previous six months of 5321. 11s. 1d. The quantity of ore raised during the same period is larger by 223 tons than that raised during the previous six months, and the general expenditure has been diminished by 2391. 18s. 3d. The price of lead which has ruled during the early part of the year rose to 211. 10s., has again fallen considerably, which has affected the profits of the half-year. The pumping-engine, which was removed from the Pozo Ancho to Warne's shaft, has been effectually repaired and re-erected, and is now at work; it is expected that the whole of the western part of the mine will very soon be brought into profitable returns. The railway between Cordova and Malaga will be opened for traffic in January, and good progress is being made with the line between Cordova and Linares, though it will not be completed so rapidly as was expected. The demand for labourers still continues, and a great scarcity of hands has been felt, consequently higher wages have to be paid for all labour required at the mines. Great expectations of the present harvest were entertained, and a considerable reduction in the price of barley confidently expected. The directors regret to say that, what with the barley not having filled well, and the exorbitant wages paid by the farmers for harvest labour, the price still continues high throughout the district. This must influence the cost of carriage of lead by carts unfavourably during the coming winter. The superintendent at Cordova was, however, fortunate enough to secure a very large quantity for the use of that establishment at prices very much lower than those at present ruling. When the line of railway between Cordova and the mines is entirely completed a great saving in the cost of carriage may be expected, and the directors trust they may be able to announce this event at the next half-yearly meeting.

The CHAIRMAN moved the adoption of the report and accounts, and stated that he wished to call attention to one or two points referred to in the report. He might mention, in the first place, that he occupied the chair upon the present occasion in consequence of the unavoidable absence of Mr. Crosbie. Since the last meeting he did not know that there had occurred any particular feature—no great progress in any department having been made, continuing pretty much in the same state as at the last meeting. It was true the reserves were somewhat less, but, on the other hand, the prospects were somewhat improved. Another feature was the probability of the railways being opened. When even opened to Cordova, it would reduce the expenditure of carriage by about 25s. per ton, which would, of course, very materially increase their profits; and when the railway was opened from the mine to Alcañices, they might look forward to a further reduction, because then one railway would be set against the other, which would be productive of a little healthy competition. The price of labour continued very high, but there seemed reason to hope that during the next six months it would not range so high a rate.—Mr. PALGRAVE seconded the motion for the adoption of the report.—Mr. HENRY enquired if it were probable that another dividend would be declared during the current year?—The CHAIRMAN said that it was not probable a dividend would be declared till at least after Christmas.

Mr. J. TAYLOR said that certainly was the impression of those who had closely examined the accounts. Referring to the mine, he stated that near the deepest engine-shaft the two veins formed a junction, and, as was often the case under similar circumstances, very large deposits of ore were found; but in depth the veins had separated, and become comparatively poor. In going eastward they spread out and formed three, and in some places four veins, but at any rate into three very distinct veins. The eastern part of the mine had for a long series of years produced a considerable quantity of ore, and was still producing largely. The ground in the central section, near the engine-shaft, was poor, but still, as a mineral vein, it was large, bold, and strong, and might be cut rich at any moment. As he had stated upon previous occasions, the adjoining mine was enormously



**MARBLE QUARRYING IN CANADA.**—We were recently shown by Mr. David Testa a large block of marble, taken from a marble quarry on his seignior, on the north shore on the River St. Lawrence, about 100 miles below the Saguenay River. It is a brilliant crystallised white, with beautiful veins of red, brown, and blue running through it, and is susceptible of a most exquisite polish. The quarry out of which this marble was taken extends for hundreds of acres, and we fancy when it comes to be



more generally known it will supersede much of the American marble now so much in use.—*Quebec Daily News.*

## QUICKSILVER MINES OF NEW ALMADEN.

The New Almaden Quicksilver Mines are situated on a range of hills subordinate to the main coast-range, the highest point of which at the place is 1200 to 1500 ft. above the valley of San Jose. South-west of the range which contains the quicksilver mines, the coast-range attains a considerable elevation, Mount Bache, its highest point, being over 3800 ft. in height.

New Almaden is approached by the railroad running from San Francisco to San Jose, a distance of 45 miles. In the course of it there is a rise of 100 ft., San Jose being of this elevation above the ocean. From San Jose to New Almaden the distance is 13 miles, with a gradual rise of 150 or perhaps 200 ft. The rocks forming the subordinate range in which the quicksilver occurs are chiefly magnesian schists, sometimes calcareous, and rarely argillaceous. As a group they may be distinguished as a steatitic, often passing into well-characterized serpentine. Their geological age is not very definitely ascertained, but they are believed by the officers of the State Geological Survey to be not older than Cretaceous. But few fragments of fossils, and those very obscure, have yet been found in these metamorphic rocks. At a point just above the *dumps*, behind the reduction works at the hacienda (or village), there is an exposure, in which may be clearly seen in projecting lines the waving edges of contorted beds of steatite and serpentine, interspersed with ochery or ferruginous layers, more easily decomposed; and the partial removal of the latter has left the steatitic beds very prominent. The mine is open at various points upon this subordinate range over a distance of four or five miles, in a north-east direction. The principal and the earliest workings of the mine were in a right line, but little more than a mile distant from the hacienda. The workings are approached, however, by a well-graded wagon-road, skirting the edges of the hills, which is 2½ miles in length.

It appears, partly from tradition and partly from the memory of persons living, that the existence of cinabar upon the hill was known for a long time prior to the discovery that it possessed any economic value. In fact, upon the very summit of this subordinate range cinabar came to the surface, and could be obtained by a slight excavation, or even by breaking the rocks lying upon the surface. In looking out for physical evidences such as would aid the eyes of an experienced observer in detecting here the probable presence of valuable metallic deposits, one observes on the summit of the hill, at various points along the line of its axis for two or three miles, and also beyond, towards the place called Bull Run, occasional loose boulders of drusy quartz, with more or less well-characterized goethite and hematite, accompanying which is an ochreous or ferruginous deposit, such as frequently forms the outcrop of metallic veins. There is, however, no such thing as a well-characterized vein, the quartz and its associated metals occurring rather in isolated masses or bunches, aggregated out of the general mass of the metamorphic rocks, and connected with each other, if at all, somewhat obscurely by thread veins of the same mineral. The main entrance to the mine at present is by a level about 800 ft. long, and large enough to accommodate a full-sized railroad and cars. This level enters the hill about 300 ft. from the summit, and is driven into a large chamber, formed by the removal of a great mass of cinabar, leaving ample space for the hoisting and ventilating apparatus employed in working the mine. At this point a vertical shaft descends to an additional depth of nearly 300 ft., over which is placed a steam-whim, with friction gearing and wire-rope, worked by a steam-engine, and by means of which all the ore from the various workings of the mine is conveniently discharged from the cars, which convey it out of the level to the dressing-floors.

The first thing which strikes the observer on entering the mine is the liberal scale of its exploration. Everything indicates a liberal and judicious use of capital in the development of a property which upon any other principle of exploration would, probably, have been unremunerative. We note also the absence of the usual galleries or levels, cut at regular distances of 10 fathoms, common in the exploration, for example, of copper mines, and of other metallic deposits, in which the ore is confined to well-characterized veins. In order to reach the lower workings of the mine, the observer may employ the bucket as a means of descent, or he may, in a more satisfactory manner, descend by a series of ladders and steps, not in the shaft, but placed in various large and irregular openings, dipping for the most part in the direction of the magnetic north, and at an angle of 30° to 50°. These cavities have been produced by the miner in excavating the main, and are often of vast proportions; one of them measures 150 ft. in length, 100 ft. in breadth, and 40 ft. in height—others are of smaller dimensions, and they communicate with each other sometimes by narrow passages, and at others by arched galleries cut through the unproductive serpentine. Some portions of the mine are heavily timbered to sustain the roof from crushing, while in other places arches or columns are left in the rock for the same purpose.

The principal minerals associated with the cinabar are quartz and calcareous spar, which usually occur together in sheets or strings, and in a majority of cases penetrate or subdivide the masses of cinabar. Sometimes narrow threads of these minerals, accompanied by a minute coloration of cinabar, serve as the only guide to the miner in discovering the metal when it has been lost in the former workings. Veins or plates of white massive magnesian rock and sheets of yellow ochre also accompany the metal. Iron pyrites are rarely found, and no mispickel was detected in any portion of the mine; running mercury is also rarely, almost never, seen.

The cinabar occurs chiefly in two forms—a massive and a sub-crystalline. The first is fine granular, or pulverulent, soft, and easily reduced to the condition of vermilion; the other is hard, more distinctly crystalline, compact, and difficult to break; but in neither of these forms does it show any tendency to develop well-formed crystals. It is occasionally seen veining the substance of greenish white or brown compact steatite or serpentine.

The ore is extracted by contract, the miners receiving a price dependent upon the greater or less facility with which the ore can be broken. By far the larger portion of the workpeople in the mines are Mexicans, who are found to be more adventurous than the Americans, and willing oftentimes to undertake jobs which the latter have abandoned. The price paid for the harder ores in the poorer portions of the mine is from \$3 to \$5 per car of 300 lbs. This weight is obtained after the ore is brought to the surface and freed by hand-breaking from the superfluous or unproductive rock; by this arrangement the company are secured from paying for anything but productive mineral. All the small stuff and dirt formed by the working of the "laborers," are also sent to the surface to form the adobe used in charging the furnaces.

It has often happened in the history of this mine, during the past 15 years, that the mine for a time has appeared to be completely exhausted of ore. Such a condition of things has, however, always proved to be but temporary, and may always be avoided by well-directed and energetic exploration. Upon projecting, by a careful survey, irregular and apparently disconnected chambers of the mine in its former workings in a section, there is easily seen to be a general conformity in the line of direction and mode of occurrence of the productive ore masses. These are found to dip in a direction towards the north, in a plain parallel, for the most part, to the plane of the hill, but at a somewhat higher angle. An intelligent comprehension of this general mode of structure has always served hitherto in guiding the mining superintendent in the discovery of new deposits of ore.

Since the settlement of the famous lawsuit, which has so long held this company in a condition of doubt, the new parties, into whose hands the property has now passed, have commenced a series of energetic and well-directed explorations at various points upon the hill, with a view to the discovery of additional deposits of ore. At one of these new openings, distant at least 500 ft. from the limit of the old workings, and not more than 200 ft. from the summit of the hill, a deposit of the richest description of the softer kind of cinabar has been discovered, which, as far as hitherto explored, has a linear extent of at least 70 or 80 ft., and in point of richness has never been surpassed by any similar discovery in the past history of the mine. A charge of 101,000 lbs., of which 70,000 were composed of this rich ore, 31,000 lbs. of "granza," or ordinary ore, and 45,000 lbs. of adobe, worth 4 per cent., making a total charge of 105,800 lbs., yielded on the day of our visit 400 flasks of mercury, at 75¢ lbs. to the flask. This yield is almost without parallel in the history of the mine. The only preparation which the ores undergo, preparatory to reduction, consists of hand-breaking, or "cobbing," for the removal of the unproductive rock. The small ores and dirt hoisted from the mine, are made into "adobe," or sun-dried bricks, sufficient for the purpose being associated with the ore. The object of these "adobe" is to build up the mouths of the furnaces to sustain the load of richer ores. No flux is employed, there being sufficient lime associated with the ore to aid the decomposition of the sulphates.

The furnaces are built entirely of brick, in dimensions capable of holding from 60,000 to 110,000 lbs., according to the character of the ores employed. The chambers are fired from a lateral furnace, fed with wood, and separated from the ore by a wall pierced with numerous openings by the omission of bricks for that purpose. Connected with the furnace is a series of lofty and capacious chambers, also of masonry, through which the whole product of combustion is conveyed to pass alternately above and below, from chamber to chamber, until all the available mercury is condensed. The draft from these furnaces is carried by inclined stacks up to the top of a lofty hill several hundred feet distant; and here the sulphurous acid and other effluvia products of the furnace are discharged. Formerly, no precautions were taken to prevent the escape of mercury through the foundations of the furnace to the earth beneath; now the furnaces stand upon double arches of brickwork, and plates of iron are built into the foundations, so as to cut off entirely all descending particles of the metal and turn them inward. To be convinced of the importance of this precaution, it is sufficient to watch the operations of the furnace for a few moments, when an intermittent stream may be seen to flow into a reservoir provided for it, and which by the former process was completely lost in the earth.

On taking up the foundations of some of the old furnaces within the last two years, the metal was found to have penetrated, or rather permeated, completely through the foundation and clay of the substructure down to the bed-rock beneath, a depth of not less than 25 or 30 feet. Over 3000 flasks of mercury were thus recovered in a single year from the foundations of the two furnaces. This loss is entirely avoided by the improved construction which has been adopted.

The whole process of reduction is extremely simple, the time occupied from one charge to another being usually about seven days. The metal begins to run from four to six hours after the fires are lighted, and in about six days the process is completed. The metal is conducted through various condensing chambers by means of pipes of iron, to a "crane-neck," which discharges into capacious kettles. It undergoes no further preparation for market, being quite clean from all dross. Deducting 2½ years, during which the mine was in a state of inactivity, pending the decision of the lawsuit, the average monthly product for 12½ years has been not far from 2800 flasks, of 75¢ lbs. each, of mercury. The selling price in San Francisco is at present, and has been for some time past, 75¢ per lb., while in London and New York it has ranged from 40¢ to 50¢ per lb.—*American Journal of Science and Art.*

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the

week ending October 2 were 11,870.15s.

HOLLOWAY'S PILLS can be confidently recommended as a domestic

remedy for the ailments of all classes and conditions of people. Young and old, men and

women, parents and children, may take this medicine with the certainty of deriving

benefit from its use, when disorder or disease is making them miserable. Holloway's

pills are unrivalled for their purifying, aperient, and strengthening properties. They

remove indigestion, palpitation, and headaches, and are specially serviceable in

complaints peculiar to females. Each box of pills is wrapped up in printed instructions for

the guidance of invalids, who will readily understand, from carefully studying them, the

best way of regaining health. Holloway's pills work a thorough change in the constitu-

tion of the weak and nervous.

## BRITISH MINES.

## Mining Correspondence.

REDFORD CONSOLS.—J. Mitchell, Oct. 1: I have received the particulars of the dealing from Capt. Davey yesterday, which gives the probable distance we have to drive for the intersection of the south branch and tin lode. The south branch, which went off from the present lode just under the engine-shaft, will require a cross-cut of about 13 fathoms to intersect it, provided it continues the same bearing, and the tin lode will require a cross-cut of 30 fms., which points will be pushed on with all speed.

J. Mitchell, Oct. 6: On Saturday last the cross-cut was set to drive north in the middle adit level towards the new north lode by six men, at 71 ft. to the tin lode, slanted the month. We shall also drive the cross-cut south towards the tin lode with the same pace of men; by so doing they will have their holes in each end and blast them on leaving, which will give us the full benefit of their labour.

BEDFORD UNITED.—James Phillips, Oct. 5: The stopes in the back of the 130 ft. level west will produce 3¼ tons of ore per fathom. There are three stopes in the back of the 115 west, one of which produces 3 tons and the other two produce 2½ tons each of ore per fathom. In the 103 west the lode is 2¼ ft. wide, yielding saving work. The stopes in the back of this level is worth 2 tons of ore per fathom. The stopes in the back of the 90 will produce 2 tons of ore per fathom. The lode in the 85 east is 18 in. wide, poor. The stopes in the back of this level is producing 2½ tons of ore per fathom; and the stopes in the 47 and 35 fms. levels are each worth 2 tons of ore per fathom. In the engine-shaft, on the north lode, the lode is 2¼ ft. wide, producing good stones of ore, and promising to improve.

BEDFORD AUR.—Oct. 5: The end in the 70 yard level has greatly improved this week; we have two separate branches, both looking very kindly for an early improvement; this end will produce fully 10 cwt. of lead ore per fm.; the strings have also improved, the ground being of a beautiful nature, and will produce 1 ton of lead per fathom; two more men have been put to work here, and if this continues we hope to have a good parcel for sale in about two months. We shall commence the erection of the cabin tomorrow, so as to get it completed before the cold weather sets in.

BOSCAWEN.—John Edwards, Richard Giles, Oct. 1: There is nothing new in the 80 or 70 west of Hunter's shaft, during the past week. The ground is favourable for driving in the 80 cross-cut, south from Hunter's shaft, towards the south lode. The lode in the pump-winch sinking below the 70, west of said shaft, is 2 ft. wide, and worth from 200 to 250 ft. per fm. for copper ore. The south lode in the 70, driving east of said shaft, is 3 ft. wide, producing rich stones of copper ore. No lode taken down in No. 1 winze, sinking below the 70, for the past week. The stopes in the back of this level is worth 200 ft. per fm. We have intersected Boscawen lode in the 30, east of Hunter's shaft, which is producing a little copper ore; we shall resume to drive east on its course. The tin lode in the 14 fm. level, driving east of Kitter's shaft, is 18 in. wide, producing stamping work for tin. Nothing new in the deep adit driving east from Hallenbeagle; ground still favourable for sinking in the new shaft.

BOTTLE HILL.—Joseph Eddy, Oct. 4: Main Lode: The lode in the stopes both in the adit and 12 fm. levels, east and west of new shaft, is large, about 8 ft. wide, and turning out good stamps work. I believe there is a run of tin ground in this part of the mine, both in length and depth, that would come away at a profit if we had a full supply of water for drawing and stamping; but for the present we are short for both, neither do I expect a greater supply before the wet weather sets in. The other parts of the mine are without alteration. We shall commence burning on Monday next for our next stamping. I cannot say the quantity; this depends entirely on the water we can get for stamping between this and the day of sale.

BRYN GWIG.—F. Evans, Oct. 5: We have commenced to drive out the 100 east, where the lode is about 1 ft. wide, composed principally of limestone, the run of ore being east of the present forebore. The 90 east is improving fast for lead ore, now worth good 2 tons per fm., and lode from 4 to 5 ft. wide. There is no change in the 90 west. The 70 east carries branches of lead, and is a promising level for ore. The 70 west is in a promising lode, producing good ore stuff. The pitches throughout the mine are looking rather better than they have been for some time past, particularly those on the run below the 75 east, and on the flat in the 66, an improvement having taken place there last week. We shall next week begin a winze in bottom of the 90 east, where there is a very good lode for lead ore. Our sampling for next week's sale will be 45 tons. We have a good branch of lead in the new west shaft, and the ground is most promising for mineral.

BRYN TAIL.—J. Roach, Oct. 7: I have nothing particular to report this week. We are driving the 30, east and west of engine-shaft, as fast as possible, and in a short time hope to get under the ore passed through in the 20.

BULLER AND BASSETT.—C. Thomas, Sept. 20: The following is my report of this mine, which I have inspected to-day:—The engine lode has been explored to the depth of 100 fms., but not drained at present below the 80. The 30 has been extended on the course of the lode about 150 fms., say, 75 fms. east and 75 fms. west of the engine-shaft, where the lode is of good width, and in places, of a promising character, but of no value for working in any part; the workings in this level on this lode are suspended, and a cross-cut driven south some 60 fathoms, where the south lode is intersected, and the 30 driven on it 4 fms. east and 14 fms. west. In the western end, and in the last 3 fms. driving, the lode contains some rich yellow copper ore and muddle, the whole showing more encouraging indications than I have seen in this mine at any of my former inspections, though not yet of value for working on tribute or by stoping. A shaft was sunk on this lode 40 fms. deep several years ago, which is situated some 30 or 40 fms. to the west end of the 30, which can be sunk to communicate with the 80, when it may be deemed desirable to do so; the fact of a shaft having been sunk 40 fms. deep on this lode, just in the right position for communicating with the 80, will be found to be a matter of importance if the lode improves so as to be of value for working. The 80 is also driven north 14 fms., for the purpose of intersecting a north lode; a small branch is passed through at 12 or 13 fms. from the engine lode, but the agents are not quite satisfied that this is the lode aimed for; they will, therefore, drive a few fathoms more by way of trial. On the engine lode the 60 is driven west some 120 fms. or more; the lode was not of good quality for the last 10 fms., where tin of good quality has been met with in sufficient quantities to leave a little profit. I think, on the whole, if a great extent of such ground were opened up, and a shaft near at hand; the lode varies in width from 1½ to 2½ feet, very easy to work; but this tin ground being 120 fms. from the shaft, where the ventilation cannot be good, and the tin, if broken, would have to be removed through that long level. Under these conditions I think you ought seriously to consider if it would not be better at once to commence sinking a shaft from surface to lay open this western part of the mine. The extent of your set westward from the end of the 60 is great, which cannot be worked to any good purpose without a shaft. The prospects of the mine for copper and tin, though not yet of a very high order, have greatly improved since my last February visit.

W. Pascoe, J. Rule, Oct. 1: At the 80, on the south lode, the lode is large. The men are driving south, but have not yet reached the south wall; good stones of yellow copper ore are to be seen as far as we have penetrated. We intend to reach the south wall of the lode before we proceed to drive on it and take it down. There is no change of importance in the cross-cut north, or the 60 west, on engine lode, since our last.

CAPE CORNWALL.—Ralph Goldworthy, Oct. 5: We have cut the clister-pit, and fixed the clister at the 20. The main roads are completed to the depth. We have dropped 10 fathoms of drawing-lift, and hope to fork to the 30 this week. Our operations at the surface are progressing satisfactorily. No change to notice in our surface operations.

CARADON CONSOLS.—W. Hich, Oct. 6: The 80 cross-cut south is being urged on as fast as possible, and another branch has been intersected within the past few days, which has a kindly appearance, and yields good quality copper ore, with prisms and muddle. We are making fair progress in sinking the winze to prove the north lode. There has been no lode taken down in the 80 east during the past week; the same remarks will apply to the engine lode in the winze below the 80.

CARADON UNITED.—R. Knapp, Oct. 6: No. 1 north lode is now 4 feet wide, 2 feet of which is composed of peach and spar, producing fine stones of yellow copper ore. The other parts of the lode is capel spar, and from present appearances these will shortly be cut out, as the ore part of the lode is continuing on that side. The water also has considerably increased within the past few days; altogether the lode in this end has a very promising appearance. There is no change in the cross-cut towards the counter and other north lodes at the 20, excepting a little improvement in the ground for driving. The winze under the adit, on the counter, is sunk deep enough for the 20. The last 15 fathoms in this winze has been sunk by the side of the lode on account of the water; but as this has been partially drained by the cross-cut at the 20, we shall now try to cut through the lode in the bottom of the winze, and hope to find it ore.

CENTRAL MINERA.—W. T. Harris, Sept. 29: In submitting to you my first report of this mine, I beg to continue my remarks to the underground workings and prospects. The position, number of lodes, the character of the stratification, &c., have heretofore been noticed, and with which you are well acquainted. Until very recently operations could be carried on only at a certain depth, for want of an engine to keep down the water. In many instances, in the eastern part of the mine good lead has been left in consequence. There is also a fine course of lead discovered, but had to be abandoned in the bottom of the 35 yard level, east of the western shaft. Operations here have had to be suspended, not so much for want of the engine, but for a communication with the adjoining company, the Twelve Apostles. Since that time arrangements have been entered into with that company, and there are now six men driving the 30 yard level west on course of the boundary towards the western shaft, and the present end is now within 30 yards of the deposit of lead referred to above; this, I anticipate, will be complete in two months from this time. There will then be an effectual drainage to this depth, and I have no doubt regular returns of lead will be made from this portion of the mine.—Engine-shaft: This shaft is 70 yards deep perpendicular, upon which a new 30-horse power horizontal steam-engine has been substantially erected, and which does its work admirably, keeping the water easily with a barrel. The 70 yard level east has been cleared and secured to the forebore. The 50 yard level is also being cleared and secured, and judging from excavations made, and the general character of the ground, good lead must have been raised when last worked. Fugate Edgeworth's shafts have been sunk to the 50 yard level, and levels driven from one to the other, from which large returns of lead were made when last worked, leaving, as I have before stated, good lead in several places, that could not be worked in consequence of the water. This obstacle has now been entirely removed by the engine, and a complete drainage effected 30 yards below the lowest point. I would now recommend for the present the 50 yard level at the engine-shaft to be cleared and secured to the end, and the 70 yard level to be driven east. At the western shaft the water to be drawn out, and a trial made upon the lead, and the 30 yard level from the Twelve Apostles to be pushed on with all possible speed. At Edgeworth's shaft a good trial could be made by pushing the 50 yard level east on course of the lode. I would also recommend the purchase of a lift of 8 or 9 inch pumps for the engine-shaft, as it is very probable the water will be too strong to be kept with barrels during the winter months. With this exception, the mine is well furnished with all requisite machinery and materials for present purposes. In conclusion, taking into consideration the position of the mine, in connection with the Twelve Apostles on the western boundary, where they are now raising strong lead, and which in a short depth must come into this mine, the Miners Union on the south, and from the discoveries already made, together with the large extent of the set, I feel justified in pronouncing it a first-rate property, and that in a short time it will become a lasting and profitable mine.

CLOWANCE WOOD.—Edw. Chegwain, Oct. 4: We put the 60-in. cylinder engine to work on Friday, which it did admirably, and still continues working well; we have set the engine-shaft to sink by nine men, which will be done as fast as possible. The masons are still building boiler-house, which will be completed as early as possible.

CONNORREE.—Capt. Bishop, Oct. 1: The deep adit is presenting more favourable indications for sulphur, and is yielding large crops of ore. In the 74, east of engine-shaft, the yield of sulphur, which is a good class, combined with copper and silver, has increased this week, and a large quantity will be sent to market. The 64, west of engine-shaft, is much the same as last week. The lode in the 54, west of engine-shaft, has much improved for copper ore, and is first-class yellow, gray, and variegated ore; it tells its own tale for the 64 and when driven under this point. The 45, west of engine-shaft, is much the same as for some time past, and augurs well for a great yield of sulphur and copper ore. The lode in the 18 fm. level, east and west of Field's shaft, is very wide, and is yielding about the same quantity of copper and sulphur ore. The 10, east of Kempson's shaft, is still looking well, and a parcel of ore will shortly be sent to market from this new, and I may say unexplored, part of the property. The stopes on the great copper and other lodes, on the whole, are looking very cheering for a great and lasting yield of better class copper and sulphur ore.

CROFT AND WHEAL ABRAHAM.—J. Vivian, Oct. 6: At Vivian's engine, at Outfield's, the engines are getting on fast fixing the 80-inch cylinder engine, the house for the No. 1 30-inch winding engine and capstan is nearly up, and the machine nearly all on the mine, and will immediately be put in its position for dropping our pitwheels, &c.; the other portion of the masons are engaged building balance-bob pit. The boiler building, with the increased staff, carries on the building of six large boilers, and their fire-tubes at the same time. The large saw-bench does its work admirably, the steam-hammer is up, and will be in order for work by the end of the week, and two large lathes are fixed in the engineers' shop for turning, boring, &c. At Wheal Abraham, on middle sump, the engineers are getting on well with the fixing of the 80-in. cylinder steam-engine, the balance-bob is in its place, and the masons here are in full force on the house for No. 2 30-inch winding engine and capstan. At Thomas's, or western district, the masons are building the stack for the 70-inch cylinder engine, and house for No. 3 winding engine and capstan. On the whole, our progress with such heavy work is satisfactory.

CROWLW.—J. Roach, Oct. 5: The quartz we are driving in still contains strong indications of our being near a deposit of lead, and I believe in a short time I shall be in a position to report a discovery of importance.

CUDDRA.—F. Puckey, E. Dunstan, Oct. 5: The lode in the 105 west is full 6 ft. wide, and worth 250 ft. per fm. In the same level, east of the cross-cut, the lode is 6 ft. wide, and worth for tin 150 ft. per fm. In the stopes in the back of this level the lode is 9 ft. wide, and worth 160 ft. per fm. We have not taken down any lode in the 90 west, on the south lode, since last reported. In the stopes in the back of the 75 the lode is 7 ft. wide, composed of quartz, peach, and a quantity of iron, which has somewhat impoverished the lode for the time; the lode is now worth for tin 120 ft. per fm. The lode cutting out behind this end is 5 ft. wide, composed of quartz, peach, iron, and tin, worth for the latter 80 ft. per fm. The lode has not been taken down in the stopes in the back of the 60, west of Walker's shaft, since last reported.

DALE.—R. Nines, Oct. 5: The Pipe vein continues much the same as when I saw you. Everything, I am glad to say, is going on well at this time, although one of our first wire drawing-ropes broke on Saturday, and we could only get the shaft, &c., ready for drawing again last evening, consequently we shall not be able to sample until Wednesday next.

DEVON AND CORNWALL.—Thos. Nell, Oct. 4: The lode in the 15 east is worth 3 tons of ore per fm. The stopes above is worth 4 tons per fm. The lode in the deep adit east is producing good stones of ore.—William and Mary: The lode in the 22 east is worth 4 tons per fm. The stopes above is worth 5 tons per fm. The lode in the 10 east is looking well, worth 7 tons of ore per fm. The lode in the winze in bottom of the deep adit level, which is about 10 fms. east of the 10 east, has improved, worth 3 tons of ore per fathom. No change in any other part of the mine.

EAST ABRAHAM.—Henry James, Oct. 4: We have erected a small wooden house for the purpose of the men changing their clothes and for keeping tools, &c., in. We have also commenced to clear up the whin-shaft, which was silted over about 2 fms. below the surface, and to effect this we have had a wagon-load of Norway timber and some Norway plank, made a windlass, and shall clear up the shaft as far as the old collar, put in a new collar, and make the shaft secure for the purpose of drawing the stuff which may be broken from the underground operations. There is no doubt but the shaft will be found firm and secure below where the collar was put in by the former workers, to the depth of 40 fathoms—to the adit level. After this is completed a horse-wheel will have to be erected at the said shaft, and the footway put in the western shaft when we shall be in order for opening on the north and south lodes eastward from the present workings.

EAST BOTTLE HILL.—Joseph Eddy, Oct. 6: We are sinking the air-shaft by six men; the ground is easy for sinking. We are also driving the adit level, by six men, and making good progress. Should the ground continue as we now have it, we shall reach the lode sooner than anticipated.

EAST CARADON.—J. Secombe, Oct. 5: Caunter Lode: The 70 east is worth 180 ft. per fathom; the 80 east, 100 ft.; and the 90 west, 50 ft. per fm.—New Lode: The 60 west is worth 70 ft. per fm.; the 80 west, 70 ft. per fm.; and the 80 east, 100 ft. per fm.—South Lode: The 70 east is worth 50 ft. per fm.

EAST CHIVERTON.—J. Nancarrow, Oct. 4: Our sumpmen sunk 9 feet last month on the course of the lode, and cut sufficient ground to cut the underlie. The lode in the bottom of the shaft is just as last reported; we have set this shaft to sink this month at 200 ft. per fm., and I hope as the ground is now we shall sink from 2 to 3 fms. on the course of this lode this month. In the eastern end, on the south lode, the lode is about 5 ft. wide, with a promising appearance, and letting out much water, with spots of lead and blende at times, but no saving work as yet; we have set to these men for the present month at 200 ft. per fathom. In the east end, on the north lode, the lode is poor; the ground is somewhat harder than it has been, now costing us 50 ft. per fathom for driving. The north lode, at 22 fms. deep from surface; the lode in this shaft appears to be disordered, at this time costing us 40 ft. per fm. for sinking. In the adit and cross-cut the ground is harder than it was some time ago, but a good looking country for lead, now costing us 30 ft. per fm. for driving.

EAST GUNNIS LAKE AND SOUTH BEDFORD.—W. G. Gard, Oct. 6: The following pitches were set on Saturday last:—No. 1, in the back of the 46, at 10s. in 11.; No. 2, in the back of the same level, at 10s. in 11. No. 1, in the back of the 36, at 9s. in 11.; No. 2, in the back of the same level, at 11s. in 11. Gard's shaft is set to sink 10 fms., by nine men, at 180 ft. per fm. The 38 fm. level end to drive by six men, at 100 ft. per fm. A rise in the lode in the deep adit, by four men, at 80 ft. per fm. We are making good progress towards the completion of the line of rods and pitwork in Gard's shaft.

EAST LAXEY.—R. Rowe, Oct. 5: The lode in the shallow adit is not so wide as last reported, but increasingly promising, the gossan being softer, and more impregnated with lead and jack. In the deep adit the lode is about 2 ft. wide, a rich looking gossan, mixed with jack. On No. 1 lode we have commenced this week to sink a new shaft, and are proceeding with the preparatory work for the erection of a new 50-ft. wheel, about half way between the two lodes, in order to command both in depth, and suitable for crushing the ores as well.

EAST MARGARET.—R. James, W. Williams, J. H. Birch, Oct. 6: We repaired the damage done to the engine by the pumping-engine boiler at work on Saturday last, and shall have the water in work to the bottom of the mine by the end of this week. The work is much quicker than was expected. No change in the several underground operations.

EAST ROSEWARNE.—J. James, Oct. 6: There is no change to notice in Hallett's shaft. In the 75 east the lode is 1 ft. wide, worth 90 ft. per fm. In the 75 west the lode is 1 ft. 8 in. wide, worth 150 ft. per fm. The stopes in the back of the 75 is worth 130 ft. per fm. We have holed the 65 winze to the 75, and are stopping west of the same in a lode worth 120 ft. per fm. In King's shaft the lode is much as last reported, worth for length of shaft 200 ft. per fm. In the 65, west of King's, the lode is 18 in. wide, worth 140 ft. per fm. for copper, and producing rich stones of tin. The stopes in the back of the 65, east of King's, the lode is worth 120 ft. per fm. and 310 ft. per fm. We have commenced to stop the back of the 65, west of King's; this is at present in a poor neck of ground, but will shortly be a good lode. The stopes in the back of the 65 are set on tribute at 9s. to 12s. 6d. in 11.

EAST TREKERRY.—J. Nancarrow, Oct. 4: In the winze below the adit west a small slide has just now disordered the lode, still it yields good stones of copper and tin. The stopes in the back of the 12 west is worth 50 ft. per fm. The stopes below the level is worth 120 ft. per fm. The 12 east is worth 20 ft. 10s. per fathom. The stopes in the back is worth 50 ft. per fm. The rise above the 30 yields rich stones of tin, and the ground is favourable. There is a little water in the 30 fathom level north, which indicates our approaching the lode.

EAST WHEAL AGAR.—F. Fryer, W. Johns, Sept. 30: We have completed cutting trip-lift at the 45, at Dunford's shaft, and have set both east and west to drive at this depth at 130 ft. per fm.; as soon as the eastern end reaches the cross-course we shall at once commence to drive a cross-cut south to cut the lodes referred to in our former reports. The 30, west of Dunford's shaft, is improved, now producing good stones of ore. The winze in the bottom of the 15 is not looking quite so well as when last reported; but, judging from the appearance of the ground, we are of opinion that the lode will shortly improve. In the 15 fm. level cross-cut north we are free from the elvan, and we hope to make good progress in driving to the level.

EAST WHEAL ELLEN.—J. Garland, T. Cornfield, Oct. 5: The lode in the winze sinking below the shallow adit level looks very promising for an early improvement, being loose, containing innumerable hollows, and is very speedy for sinking, composed of peach, spar, blende, muddle, &c., producing also good stones of ore occasionally. The stopes in bottom of the deep adit level is looking very well; lode 3 ft. wide, producing 2 tons of ore per fm., and of similar character to the lode in our richest stopes, which was directly above this in the back of the level. No change in the cross-cut south of this level.

EAST WHEAL FALMOUTH.—Wm. Hancock, Oct. 3: The engine-shaft is sunk 11 fms. 3 ft. below the 27; the lode when last taken down was about 2 ft. wide; 9 in. of the very part of it producing saving work for tin in fact, good stones of ore, and at present free from blende. We have sunk about 6 ft. in the bottom of the 37 west, and find we cannot do any more, unless at a great disadvantage and extra expense, until further drained by the level below; the lode is about 2½ ft. wide, producing good tinwork, and if dry would pay well. The men in a day or so, when not otherwise engaged, will try to sink a little in the same level east, about 20 fathoms from shaft, in a shoot of tin. We have about 9 ft. more to sink to make the shaft deep enough for a 40 before commencing to drive; shaft let at 260 ft. per fm., and if completed in three weeks from this time to have 21 ft. produced.

EAST WHEAL FLORENCE.—Wm. Verran, Oct. 6: We are progressing favourably with the sinking of Verran's engine-shaft, and hope soon to be down to the depth of the adit level, 16 fms.; the ground in the shaft is comparatively easy for sinking, and if our progress is not retarded by an increase of water, another month after the present will bring us to nearly the required depth; the lode is still large, producing quantities of muddle, and occasional spots of copper ore, but as we are anxious to get down as fast as possible, we do not intend cutting through the lode until we get to the depth of the adit. In driving east on King's lode, towards the engine-shaft, we have had some good stones of copper ore, and where we cut through the lode, about 14 fms. behind the present end, we have a much better lode than on the south side, where we are driving; but as our object is to drive this level home to the shaft as quickly as is practicable, we shall not often cross-cut the lode till that object be accomplished. The masons are getting on well with building the engine-house, carpenter's shop, &c., satisfactorily, and good progress is being made in getting the engine ready at the foundry, so we hope no time will be lost in getting the mine into good working order, when, judging from present prospects, we shall be able to open up a most valuable property, which, together with Redmoor, Kelly Bray, and the prosperous mines contiguous, will, it is to be hoped, compensate for the loss of that important mine, Holmboe. We sampled last Friday 38 tons of copper ore (computed), to be sold



my report thereon.—Since I last visited the mine, I find that the ore has been worked out to the west as far as the 30 within 7 fathoms; the lode in the forebrest is disordered and the ore is not so productive. A few feet behind this end a cross-cut is in course of driving north to ascertain if any more lode is standing in that direction. In the 30 west the lode has very much improved, and for the last 15 fathoms driving is worth fully 20% per fathom; the



Rope, ditto .....	"	—	.. 48 0 ..	—	.. 48 0 ..	—	.. —
White yarn, ditto .....	"	—	.. 0 5 1/2 ..	—	.. — ..	—	.. —
Hills, ditto.....per doz.	1 10	..	—	..	1 10	..	—



[EXTRACTS FROM OUR CORRESPONDENCE.]

zho 102, driving west of the cross-cut, the lode is disordered by a cross-course, and we think there are yet 2 fms. to drive before we get clear of the influence of the same, after which there is every reason to expect an improvement.—North Tincroft Lode: In the 164, driving west of Tyrre's engine-shaft, the lode is producing saving work for tin. In the 164, east of shaft, the lode is worth for tin and copper 254. per fm. The stopes and pitches are improved since the last meeting, so much so that we calculate to raise about 180 tons of tin per quarter in future.—W. TEAGUE.

FRONTINO AND BOLIVIA (SOUTH AMERICA) GOLD MINING COMPANY.—All the necessary preliminary arrangements for the economic and extensive development of this company's property may now be said to have been completed, and it cannot fail to be satisfactory to those interested to find that so much has been done in such a comparatively short period. As has already been mentioned in the Journal, a large staff of officers, mechanics, and miners left England in June last, and since then Messrs. Oates and Co., founders, of Wadebridge, have completed the manufacture of a somewhat novel and powerful steam stamping-engine, capable of working 60 heads of stamps, the novelty in the construction being that no part of the entire machinery exceeded 112 lbs. in weight. Previous to its shipment, it was examined by several engineers and manufacturers of mining machinery, all of whom were unanimous in pronouncing it to be most efficient and complete, and reflecting the greatest credit upon the makers. Capt. Goyen, the company's superintendent, with a further staff, sailed from Southampton on Sept. 2, taking with them the boiler and other heavy portions of the machinery, and there is reason to hope that they will arrive at their destination by about Oct. 15. On Monday the remainder of the machinery was shipped at Southampton on board the Royal Mail Company's Steam Packet *Tasmanian*, and it is confidently expected that by the end of the present year the whole of it will be in full working order, and that soon after the mines will be producing large and profitable returns. As an evidence of the valuable character of the company's property, it may be mentioned that advices have just been received to the effect that two miners working at Bolivia extracted, in the short space of five weeks, between 300*l.* and 400*l.* worth of gold, with only three heads of stamps working eight blows per minute. As the engine above referred to, when in full operation, will work from 40 to 60 heads of stamps, at something like 70 blows per minute, and the auriferous quartz being practically inexhaustible, some idea may be formed of the immense returns that will be made from such an extensive scale of operations. The Frontino Mine already provided with powerful water machinery, sufficient to produce large and important returns; so that regular monthly advices, with remittance of gold, may now be expected.

• With last week's Journal we gave a SUPPLEMENTAL SHEET, which contains the third paper on the Present Condition of the Labour Market; the New Turkish Mining Laws; the Mineral Wealth of Turkey; Economic Treatment of Aluminium; Researches for a New Theory of Geology; the Simplicity of the Creation; Natural Ventilation Interpreted and Practically Applied; an Electric Telegraph without Wires; Electric Light; New Alloy for Bells; Wheal Penrose Lead Mines; the Hot Springs of Cornwall; the New Light; New Quartz-Mill in Nevada; a New Red Light; Plaster of Paris for Paint; Meetings of the Tin Hill and Caradon Consols Mining Companies; New Inventions; Improved Safety-Cage; Treating Tar, and obtaining Products Therefrom; Extracting Precious Metals from Lead; Prices of Materials; Reports from Foreign Mining Companies; New Mining Company Law in Australia; Water Rights, &c.

**METAL MARKET**—LONDON, OCT. 7, 1864.

COPPER.				BRASS.				Per. lb.	
	£	s.	d.	£	s.	d.			
Best selected.....p. ton	39	0	0	101	0	0	Sheets .....	94½d.-10s.	
Tough cake.....	38	0	0	98	0	0	Wire .....	95½d.-	
Tile.....	38	0	0	98	0	0	Tubes .....	94d.-10s.	
Barra Burns .....	101	0	0	—	—	—			
Copper wire.....p. lb.	0	1	1	—	—	—	Swedish, in kegs (rolled)	10	0-15 14
ditto tubes .....	0	1	1½	—	—	—	" (hammered)	16	0-15 4
Sheathing & bolts p. ton	101	0	0	102	0	0	Ditto in faggots.....	17	0-18 0
Bottoms .....	112	0	0	—	—	—	English, Spring .....	19	0-23 0
Old (Exchange) .....	91	0	0	—	—	—	Bessemer's Engineers Tool	44	0-0
							" Spindles .....	30	0-0
							QUICKSILVER (per bottle).	8	0-0 nom.
IRON.				SPELTER.				Per Ton.	
Bars Welsh, in London.....	7	17	6	—	—	—	Foreign .....	23	12 6
Ditto, to arrive .....	7	15	0	7	17	6	To arrive .....	23	15 0
Nail rods .....	8	15	0	—	—	—			
" Stafford, London .....	9	10	0	—	—	—	ZINC.		
Bars ditto .....	9	10	0	—	—	—	In sheets .....	28	0-0
Hoops ditto .....	10	0	0	11	0	0			
Sheets, single .....	11	0	0	11	0	0	TIN.		
Fig No. 1, in Wales.....	4	10	0	—	—	—	English, blocks .....	101	0-0
Refined metal, ditto.....	4	0	0	5	0	0	Ditto, Bars (in barrels).....	102	0-0
Bars, common, ditto.....	7	0	0	—	—	—	Ditto, Refined .....	106	0-0
Do, merchant, Tyne or Tees .....	8	5	0	8	10	0	" Banca .....	99	0-0
Ditto, railway, in London .....	10	0	0	10	0	0	Straits .....	98	0-98 10
Ditto Swed. in London .....	12	0	0	12	5	0			
To arrive .....	12	5	0	—	—	—	PLATES.*		
Fig. No. 1, in Clyde.....	2	14	0	2	19	0	IC Charcoal, 1st qua. p. bx.	1	8-0-1 11
Ditto, f.o.b. Tyne or Tees .....	2	16	0	2	18	0	IX Ditto 1st quality .....	1	14-0-1 17
Ditto, forge, f.o.b. ditto.....	2	15	0	—	—	—	IX Ditto 2d quality .....	1	6-0-1 8
Railway chairs .....	5	10	0	5	15	0	IX Ditto 2d quality .....	1	12-0-1 14
" spikes .....	11	0	0	12	0	0	IX Coke .....	1	3-0-1 5
							IX Ditto .....	1	9-0-1 11
LEAD.				Cannado plates .....				p. ton	13 0-0
English Pig, ordny. shot	20	5	0-21	10 0			In London; 20s. less at the works.		
Ditto (WB) .....	22	10	0-0	—			Yellow Metal Sheathing, p. lb. 8½d.-		
Ditto sheet .....	23	10	0-21	10 0			Sheets .....		
Ditto rod .....	23	10	0-21	10 0			Indian Charcoal Pigs .....		
Ditto white .....	26	0	0-26	5 0			In London .....		
Ditto patent shot.....	23	0	0-0	—			7 0-0 7 10		
Spanish .....	10	10	0-0	—					

\* At the works, 1s. to 1s. 6d. per box less.

loss and the future encouragement of strikes. Trade buoyant, as far as orders can be executed. Common pigs range from 3*l*. to 3*l*. 5*s*.; fat pigs, 3*l*. 10*s*.; better class, 4*l*.; hydrates, 4*l*. 10*s*. to 4*l*. 15*s*.; hematite 3*l*. 10*s*. to 4*l*. 5*s*., according to quality; Yorkshire, 3*l*. 5*s*. to 3*l*. 12*s*. 6*d*. common melters of this district, 3*l*. 5*s*. to 3*l*. 10*s*.; best North Staffordshire 3*l*. 5*s*. Manufactured iron: Merchant bars, 8*l*. 10*s*.; hoops, 9*l*. 10*s*.; sheets, singles, 10*l*.; doubles, 11*l*. 10*s*.; marked bars, 8*l*. 10*s*.; latter

**PHILADELPHIA, SEPT. 23.**—The Iron Trade continues languid and dull with very little disposition on the part of buyers to operate to any extent in the unsettled state of the currency, but the stocks on sale are light, and holders are not disposed to make large concessions, and only some 600 tons of pig metal have been disposed of since Sept. 2, at \$23.50 for No. 3, and \$27.10 and \$27.30 for No. 1 and No. 2, cash, at which rates there are more sellers than buyers. No. 1 and No. 2 sell at \$70 to \$72. Blooms and boiler-plates are in limited demand at previous prices, and demand for manufactured iron generally is less active. At Pittsburgh the iron trade is dull. The decline in foreign exchange has caused a reaction. The buoyancy of the market two months has given way to a feeling of distrust on the part of consumers of pig-metal, and, as a consequence, the aggregate sales for the week have been unusually light. The aggregate trade in cast-iron, however, has been better, and the stocks of metals, however, continue firm in their views. Stock both at furnaces and in yards is still being run usually light for the season, and with a general resumption of operations by mills (not out of blast for repairs) a consumptive demand equal to present current receipts is anticipated. Sales comprise about 800 tons, in lots, at \$30, of charcoal forge, and \$75 for anthracite, cash and 60 days. Copper is but little inquired for, and prices nominally unchanged, with small sales at 51 c. to 52 c. for ingot, 73 c. for sheets, and 60 c. for wire. The shipbuilders' trade is also dull, and the demand for old orders, which are mostly to go South for the Government, are very light, and the new orders, both here and at the East, continue very dull at quotations, which are nearly nominal. —The States Railroad and Mining Register.

September.		IMPORTS.		Nine months.	
Slabs.	1864. 1863. 1862.	1864. 1863.	1864. 1863.	1864. 1863.	1864. 1863.
	21,144 ... 11,765 ... 3,575	13,291 ... 90,926 ... 11,211			
September.		DELIVERIES.		Nine months.	
Slabs.	1864. 1863. 1862.	1864. 1863.	1864. 1863.	1864. 1863.	1864. 1863.
	23,960 ... 5,433 ... 12,119	137,300 ... 98,996 ... 31,762			
Stock on warrants, Sept. 30.		STOCK.		Unacid, Sept. 30.	
Slabs.	1864. 1863. 1862.	1864. 1863.	1864. 1863.	1864. 1863.	1864. 1863.
	44,500 ... 94,636 ... 33,287	38,996 ... 33,762 ... 31,762			

**THE COPPER TRADE.**—Mr. J. Pitcairn-Campbell, of Liverpool, reports

The market bears the pressure generally existing better than most articles; but course, transactions are limited to the smallest possible extent. Transactions fortnight have been—

Sept. 13.—	40 tons bars, per "Governor," Swansea (net, 2 mo.'s).....	£84 10	0	p	er	t	on
" 16.—	100 tons bars, second hands (usual conditions) .....	83	10	0			
" 17.—	70       "                 "                 (net, 2 months) .....	83	0	0			
" 20.—	50       "                 "                 " .....	83	0	0			
" 22.—	420 tons regulus, per "M. A. Holman" .....	0	17	2	p	e	r
" 29.—	50 tons bars, second hands (net, 2 months) .....	85	0	0	p	e	r

Quotations are 17s. 6d. for ore and regulus, #41. for bars, and 18s. to 18s. 3d. for Bar Arrivals from West Coast have been since my last—"Tocopilla," 467 tons ore, 290 regulus. Stocks in first and second hands, as nearly as they can be estimated, we are likely to come in the market are of Chili—

Ores.	Regulus.	Bars.	Barilla.
1068 .....	853 .....	3677 .....	130 .....

In Swansea they are—

Ores.	Regulus.	Bars.	Ingot.
3470 .....	559 .....	1368 .....	228 .....

THE MINING SHARE MARKET has been particularly dull and depressed this week, with very few transactions, and these, for the most part, at reduced rates. The state of the money market, the heavy commercial failures, and the "rumours" always attending such a state of affairs, seem to have put a stop to speculation for the time, and the dealers remain quiet. The failure of a house this week, caused by the defalcations of a confidential clerk and cashier, whose forgeries are said to amount to nearly 400,000, has caused some excitement in the City, especially as the delinquent was known to be a large speculator in foreign stocks and shares, and an occasional dabbler in mines. Everyone must agree with the *Times* that it behoves all brokers and agents to be cautious in their transactions with persons holding situations of trust; but in the present instance, we understand, it was not generally, if at all, known that the person alluded to held any commercial situation whatever. He was known to deal exclusively on his own account in Russian produce, and to receive large remittances from St. Petersburg; and we believe some of the large houses in the City, who occasionally made advances upon bills so received, were ignorant that he was engaged in any situation of trust, and looked upon him as one trading on his own account. In reference to his share speculation, we think we shall be able to show, from various reliable sources of information, that a comparatively small amount of money was ever paid by him for losses in mining speculations; and that many of the dealers in the mining market are rather severe sufferers through his default. We understand that East Caradons were between 40*l.* and 50*l.* per share, the person alluded to had the mine privately inspected, and, upon getting his agent's report, he employed five or six different brokers on the Stock and Mining exchanges to buy largely for him, for the "account." The price, however, contrary to his expectations, when down, and when the day of settlement came the different brokers found to their astonishment that they had been buying for one and the same person, who could neither take up stock nor pay the "differences." Consequently every broker had to provide for the settlement in the best way he could, and a panic ensued in the shares, which many of the readers of the *Mining Journal* will remember. The total loss in all these transactions which had to be provided for by the market, amounted to something like 6000*l.*; and this was eventually settled by the defaulter giving his own acceptances for the amounts for different dates, extending over a period of more than two years. As some of the earliest of these bills became due, we understand one or two lucky hits enabled him to meet them out of profits made; many had to be renewed, and these, with others for rather a large amount, still remain in the hands of persons on the market, and, of course, valueless. His speculations in mines, however, from all we can gather, were as nothing compared with his transactions in foreign stocks; and late he was known to have lost very heavily in one of the newly-published joint-stock banks. We may add that his employer appears to have had the utmost confidence in his honesty and integrity, and so, it is said, he seems, had almost everyone with whom he had come in contact.

seen, had almost everyone with whom he had come in contact. East Grenville shares have kept quiet, and leave off 74 to 75; the west is worth 2 tons of ore per fm.; the 55 west, 354. per fm.; the above this level, 454. per fm.; the 75 has not yet come into a course of but an elvan has made its appearance, as it did in the level above, a lode improved for ore. Wheal Grenville shares are flat, at 64 to 65 almost an entire absence of business. Wheal Crebor shares have pretty firm, and leave off 42s. to 44s.; the lode in Cock's shaft is 7 wide, yielding saving work; in the 96 west the lode is worth 304. per fm. the 96 east is 2½ tons per fm.; the stopes in the bottom are worth 304. fathom. Carn Camborne, 32s. to 34s.; Clifford Amalgamated, 30 to Cook's Kitchen, 12 to 13; East Basset, 60 to 62½; East Carn, 24 to 7½; East Lovell, 74 to 8; East Russell, 44 to 5; Great Bus, 24 to Great Laxey, 14½ to 15½; Great Wheal Vor, 29 to 30; Hallenbeg, 2 to 8½; Hingston Down, 4 to 4½; Kelly Bray, 13s. to 15s.; Marke Vy 3½ to 4½; Nangiles, 26 to 27; North Rosekar, 20 to 22; North Trevel 3½ to 3½; Providence Mines, 38 to 39; Redmoor, 2s. 6d. to 3s. 6d.; S. Caradon, 53s to 54s; South Condurrow, 33s. to 35s; South Grenville to 12s.; West Caradon, 64 to 74; West Chiverton, 55 to 60; West Fra 28 to 30; West Seton, 205 to 210; West Tolgus, 62½ to 55; Wheal B 13 to 15; Wheal Chiverton, 5½ to 6; Wheal Mary Ann, 16 to 17; Whe Seton, 207½ to 212½; Wheal Trelawny, 19 to 20; Wheal Uny, 34 Prince of Wales, 3s. 6d. to 4s. 6d. Altan, 25s. to 30s.; a good disc has been made here, and shares in request.

On the Stock Exchange business in Mining Shares has been very during the week. The following quotations were officially recorded for British Mining Shares:—Devon Great Consols, 58½, 57½; East B 63, 64, 64½, 63, 62; Great Wheal Vor, 30½, 29½; Nangiles, 25½; W Trelawny, 15½; New Seton, 60; East Caradoc, 27½; East Lavelle Great Laxey, 15½; Tincroft, 6. In Colonial Mining Shares the prices were:—Worthing, 1; Yudanamutana, 1½; Port Phillip, 1. In Foreign Mining Shares the prices were:—East del Rey, 1; Don Pedro Norte,



Rev. J. Pannicillo, 11; Cobro Copper, 27, 27½; Dun Mountain Copper, 3; St. John del Rey, 36½.

**IRISH MINE SHARE MARKET.**—The very genuineness of the value of our mines has been the means of checking speculative transactions in them for the last few days. The uncertainty, for a time, of the turn which the value of money would take led our financial men to speculate chiefly for a "fall" and mining shares were not considered the kind of security likely to succumb to a possible panic to any such extent as bank or railway shares. The consequence was that there were few buyers of mining shares, plenty of other shares having been thrown on the market at reduced prices; in fact, so far from mining shares giving way, they more than maintained our last quotations. A few Wicklow Copper shares (2½ 10s. paid) changed hands at last price—14½ 5s., and there were ineffectual enquiries for more, at an advance of an eighth. Mining Company of Ireland shares (7½ paid) were also in demand, but the advance required by holders was not granted. Business might, however, be done at 28½ 15s. for delivery in January next. Connors shares were also in request for January, at the improved price of 18s. 6d., as well as for immediate transfer. Crys-fort shares were on sale.

On the same day (Saturday last) when we gave the information that the *Morning Herald* had deputed a "special correspondent" to Ireland, his first production appeared. The theme he had set himself for his debut was to show up the impolicy of the apprehended Whig measure of abolishing the Viceroyalty, and to point out how much such a step would be disapproved of by the majority of Irishmen. This notion was evidently preconceived in and imported from England, for the said special correspondent was but a few days in our country before he, with the power of observation for which we give him credit, discovered that the "to be or not to be" of the abolition of the Viceroyalty is by no means a question of as much moment to Irishmen in general as is supposed by some folks in England; and he admits, with commendable and honest candour, in the first paragraph of his second letter—"Although the effects of the abolition of the office of Viceroy, if such a step were unaccompanied by any measure calculated to mitigate its evils, would be very prejudicial, it would, perhaps, be possible without any great difficulty to reconcile the Irish to it." Here is as plain an admission as can be expected from any journal of a strong political party-colour, that the real wants of the Irish people are, after all, not to be purely political movements. This being admitted, it follows that we are right in asserting that what we most require to place us on a par with other British possessions is the influx of capital, with a proper admixture of English spirit of enterprise, to develop the mineral and agricultural capabilities of our country, which, if examined into with the interest due to them and to Ireland, will undoubtedly prove to be more promising in advantageous results, and much more easily comestable, than those of other countries to which so much of England's spare capital flows. Inasmuch as, as our title plainly indicates, the *Journal* is a purely scientific and commercial organ, and the "vexed question of Ireland's wants" involves also points of political economy, we must content ourselves with simply having called attention to the fact that Ireland possesses natural facilities for material improvement in her domestic condition, which require only the application of capital to be made available, with even greater profit to the investors than to our own people, who, however, we should be happy and content with the smaller share of advantage. The tranquillity and prosperity of our country would be surest and soonest effected if Government and private enterprise would enable our industrious people to exchange the shilleagh for the pick and gad, the plough and shovel. Ours is an active, lively race. We must be up and doing something; do battle in some shape or other. If we cannot do so in the field of industry, which would be preferred by all, excepting only a very few mandarin political stump-orators, we must fight in any other field near to hand. We claim the privilege to break our own heads to our simple hearts' content, until we are better employed.

**COAL MARKET.**—The arrival of 108 ships caused a busy market in household coal, and a large business was done at fully last day's prices. Hartley's and manufacturers' continued a steady trade at previous quotations. Best house coal, 19s. 9d. to 20s. 6d.; seconds, 18s. 3d. to 19s. 3d.; Hartley's, 18s. to 19s.; manufacturers', 18s. 6d. to 19s. 6d. per ton.—On Wednesday only 12 ships arriving, and from the strong easterly winds on the coast little prospect of supplies for some days, produced a firm tone in the market for house coal, and prices quote an advance of 6d. per ton. No alteration in Hartley's or manufacturers'.—On Friday, the 16 arrivals were all steamers, with gas and contract coal. The small quantity for sale was entirely cleared off at fully last day's prices for all descriptions. Hetton Wallsend, 21s. 3d.; Haswell Wallsend, 21s.; South Hetton Wallsend, 21s.; Tunstall Wallsend, 19s.; Hartley's Hartley, 19s.; unsoled, 21s.; 25 ships at sea.

**THE LONDON COAL TRADE.**—During September the various railways having access to the metropolis carried 171,914 tons 11 cwt. of coal, coke, &c., against 167,498 tons for the corresponding month of 1863. The London and North-Western Railway entered 71,767 tons 18 cwt.; Great Northern, 64,195 tons; Great Eastern, 18,625 tons 7 cwt.; Midland, 10,593 tons 18 cwt.; Great Western, 4,000 tons; South-Western, 1,625 tons 9 cwt.; London, Chatham, and Dover, 1,047 tons 19 cwt.; and Tilbury and Southend, 59 tons. So far in the present year the railways have entered 1,669,349 tons 4 cwt., against 1,237,153 tons 18 cwt. for the first nine months of 1863, being an increase of 432,195 tons 6 cwt. The canal supply has been for September 731 tons 5 cwt., against 877 tons for September, 1863; and upon the year there is a decrease of 478 tons, this year's supply being 6992 tons 5 cwt., against 7470 tons 5 cwt. from January 1 to September 30, 1863.

**LIVERPOOL COAL TRADE.**—From the Coal Circular of Messrs. Platt we learn that the quantity of Cannel, coal, coke, and patent fuel shipped at Liverpool in Sept. was 61,524 tons, and in the corresponding month of last year 59,184 tons, showing an increase last month of 2340 tons. The exports coastwise during Sept. were 11,563 tons; same month last year, 13,323 tons—decrease last month, 1765 tons. Total exports coastwise Jan. to Sept., 108,007 tons; same period last year, 74,667 tons—increase this year, 33,340 tons.

**BRISTOL COAL TRADE.**—During September 844 tons of coal were exported over sea from Bristol, as against 1948 tons in the preceding month, showing a decrease of 1104 tons in the shipments. The exports in Sept. were made as follows:—Cronstadt, 330 tons; Demerara, 270 tons; St. John's (Newfoundland), 244 tons; total, 844 tons. Compared with the corresponding month last year, when 801 tons of coal were exported from Bristol, the above returns show an increase of 43 tons in the exports.

**At Redruth Ticketing, on Thursday, 3289 tons of ore were sold, realising 16,931 1/2.** The particulars of the sale were—Average standard, 122½ 11s.; average produce, 6½; average price per ton, 5½ 2s. 6d.; quantity of fine copper, 211 tons 19 cwt. The following are the particulars:—  
Date. Tons. Standard. Produce. Price per ton. Per unit. Ore copper.  
Sept. 1. 2837. 122 12 0 0 6½. £5 8 6. 16. 3d. £21 6 6  
" 8. 2093. 124 0 0 0 6½. 5 0 16. 4. 12 0. 81 12 0  
" 22. 4508. 130 16 0 0 6½. 4 12 6. 18 5. 82 16 0  
" 29. 3683. 123 19 0 0 6½. 4 18 0. 15 10½. 79 9 0  
Oct. 5. 3289. 122 11 0 0 6½. 5 2 6. 18 11½. 79 17 6  
Compared with last week's sale, the standard has slightly advanced. Compared with the corresponding sale of last month, the decline has been in the standard 1½ 4s., and in the price per ton of ore about 1s. 6d.

**At the Herodsfoot Mine meeting, on Tuesday, the accounts showed a profit on the four months' working, to end of Aug., of 1815s. 0d., a balance of assets over liabilities of 4381 1/2s., and a cash balance of 2709 1/2s. 3d. A dividend of 35s. per share was declared. Messrs. Loom, Hawke, Caunter, Hawker, and C. Davey were re-elected members of the committee. Captain Trevillian's report is inserted among our Mining Intelligence.**

**At Wheel Basset meeting, on Tuesday, the accounts showed a credit balance of 1829 1/2.** The profit on the two months' working was 926 1/2. A dividend of 78s. (11 10s. per share) was declared, and 1061 1/2 carried to credit of next account.

**At the Cwm Erwin Mine meeting, on Sept. 29, a dividend of 650 1/2 5s. (15s. per share) was declared.** The prospects of the mine are excellent.

**At Caradon and Phoenix Consols Mine meeting, on Monday, the accounts showed a credit balance of 2751 1/2 5s. 6d.** The workings had been delayed for want of water, but the directors hope that very shortly operations will be spiritedly resumed. Capt. W. Richards recommended that the engine-shaft be sunk to the 45 and 60 fathom levels, believing that if this be done, and the levels properly extended in the usual mining way, good success will attend our efforts. We have several tons of munda and blende, with some good quality copper ore, broken underground, to be hauled to surface as soon as the water is in fork. I consider the prospects of the mine to be very cheering." A fortnightly report is to appear in the *Journal*.

**At North Trekerby Mine meeting, on Tuesday, the accounts for July and August showed a credit balance of 2431 1/2 7d.** Captains Pryor, Trengrove, and J. Smith were re-elected. Our prospects, on the whole, are very favourable, and we fully believe that we are now driving the 100 fm. level through the largest deposit of ore that has ever been discovered in this mine, as we are now nearing the elvan course, in the neighbourhood of which lodes in this district have never failed to make large deposits of ore.

Mr. R. Matthews adds—"The sale of copper ores on Sept. 29, to come to credit of next account, amounts to 1599 1/2 4s. 4d., in addition to which there will be the sale of tin. The 23 fms. driven through in the 100 are worth on an average 80 1/2 fm. which, according to the usual mode of reckoning courses of ore, must have laid open over 6000 1/2 worth."

**At Great East Lovell general meeting, on Thursday, the accounts showed a credit balance to end of July of 3533 1/2 9s. 10d.** It was expected the engine-house would be built in four weeks. The contract entered into was to erect the engine in eight weeks.

**At East Wheel Lovell four-monthly general meeting, held at Helston, on Thursday (Mr. Henry Rogers, the purser, in the chair), the accounts showed a loss of 504 1/2 11s. 11d., and a balance against the mine of 182 1/2 10s. 3d.** The Chairman stated that he greatly regretted the present financial state of the company, as he fully believed that the last meeting of shareholders they would have been able to have declared a similar dividend to the last, of 10s. per share, otherwise he would never have been a party to the declaration of the last dividend. There was, however, no necessity for any call, as had been for some time reported, and but for operations being almost entirely confined to the new shaft, the accounts would have shown a very different position.—Capt. Bargin stated, in answer to questions, that in consequence of the sinking of the new shaft, and the suspension of sinking on the rich bunch of tin on the north lode, in the bottom of the shaft, and other places, the returns had not been so much as expected, and it would take about two months to finally complete the new shaft, when the returns would increase.

**At South Wheel Soton meeting, on Thursday, the accounts for July and August showed a debit balance of 1342 1/2.** A call of 3 1/2 per share was made.

**At the Durlu Mine meeting, on Sept. 26, the accounts for the quarter ending with the costs for June showed a debit balance of 1064 1/2 4s. 4d.** A call of 10s. per share was made. The committee having recommended that the 139 relinquished shares be offered for sale, it was resolved that the meeting be adjourned until after the sale of the shares, to confirm such sale, and transact any other business, for which purpose the meeting was made special. The shares having been offered for sale, and there being no bidders, it was agreed that the sale should be adjourned until the next general meeting. It was resolved that the workings on the Durlu lode should be abandoned, and that the materials be drawn to the surface. The agents' report stated that the want of water had prevented them returning the whole of the tin raised, extending to 5 tons, which would account for the balance on the quarter being more than the preceding one.

**At the Craddock Moor Mine meeting, on Sept. 29, the accounts for the two months ending with the costs for June showed a credit balance of 527 1/2 5s. 10d.** It was proposed to sell about 230 tons of copper ores for the next two months.

**At the North Levant Mine meeting, on Sept. 24, the accounts for the six months ending with costs for June showed a debit balance of 2036 1/2 14s. 3d.** A call of 10s. per share was made. The arrears of call unpaid, and not credited, amounted to 599 1/2 3s. 8d., payment of a large portion of which was daily expected, and when paid the debit balance would be 1437 1/2 10s. 7d. There were eleven tribute pitches working, varying from 7s. to 16s. in 1 1/2. Since the last meeting they have cleared up the East Levant part of the mine to the bottom (70 fms. from surface), and have sunk the engine-shaft 14 fms., through a tin lode varying from 7 1/2 to 13 1/2 per fathom. In a week it will be down another fathom, where they will drive an 85 fathom level; and if they find the lode as good in the level as it has been in the shaft, of which they have no doubt, they would soon be in a position to pay all the costs: at present, the tin more than pays the monthly labour cost.

**At the Treworliss Mine meeting, on Monday, the accounts for six months showed a debit balance of 1528 1/2 7s. 1d., which, divided *pro rata*, requires a call of 15s. 3d. per share.**

**At the Wheel Reeth meeting, on Sept. 28 (Mr. E. Rodd in the chair), the accounts for the quarter ending with the costs for June showed a debit balance of 634 1/2 6s. 7d.** The loss upon the quarter was 275 1/2 7s. 11d. Looking at the report of the agents, and the prospects of future returns of tin from the mine, the committee recommended the above balance to be carried forward. The agents concluded their report by stating that they have "81 men working 29 pitches, at an average tribute of 7s. 6d. in 1 1/2, at the present value of tin. In consequence of the fact that the prospects of the mine continue to be quite as good as at the last account. We shall at once prepare to put the wire-rope to work, which we calculate will take about a fortnight to complete; when this is done we shall be able to draw a much larger quantity of tinstuff, which is a matter of considerable importance to the mine."

**At the Conselt Iron Company half-yearly meeting, held in Newcastle, on Sept. 28 (Mr. H. Fenwick, M.P., in the chair), the report showed the net profit for the half-year had amounted to upwards of 21,000 1/2, of which the directors had appropriated about 6000 1/2, for the improvement of the works, this step being deemed preferable to an augmentation of the capital; and the available surplus, it was found, was sufficient to warrant a dividend of almost 10 per cent., which was accordingly declared. Authority was given to the directors to borrow a sum not exceeding 60,000 1/2, with the view of continuing existing mortgages to the extent of 32,000 1/2, but especially for the purpose of increasing the puddling powers, which it was stated would largely increase the profit of the company. In proof, indeed, of the importance of this latter measure, the Chairman mentioned the fact that had such facilities been in operation during the past half-year, the balance of receipts for that period would have been augmented by not less than 10,000 1/2. The retiring directors were re-elected, and a vote of thanks for their services was unanimously accorded to them.**

**At Muntz's Metal Company first general meeting, on Wednesday, at the Royal Hotel, Birmingham (Mr. G. F. Young in the chair), the Chairman, in moving the adoption of the report of the directors (which appeared in last week's *Journal*), reviewed the position and prospects of the company, which he spoke of as encouraging. He had no reason whatever to doubt but that it would realise a reasonable dividend; at the same time he could well understand how those who entered the concern in anticipation of an enormous return for their investment—a sort of mine of wealth—were likely to feel some disappointment. For the depreciation which had taken place in the value of the shares he was utterly at a loss to account. The motion for the adoption of the report having been seconded, was carried after a brief discussion; and in reply to a question by Mr. Robert Wright, the Chairman said that the board had not at that time any further call in contemplation. In the course of some remarks by Mr. Jeffrey, he mentioned the fact that the sellers of the shares were not local holders, but persons at a distance, who had little knowledge of the value or the real nature of the property, but who, having been disappointed at the shares not going to a premium, had put them on the market; at the same time, the number of shares transferred had been comparatively small. Messrs. Coleman, Turquand, and Co., were appointed auditors; and power was given to the directors to fix the next general meeting at such time as may be convenient; an explanation having been offered by several members of the board to the effect that it was expected the accounts would not be sufficiently made up to enable them to call the meeting before the second week in April next.**

**At the Linares Lead Mine meeting, on Thursday (Mr. C. Morris in the chair), the report of the directors and balance-sheet were received and adopted. Details in another column.**

**At the Fortuna Company meeting, on Thursday (Mr. C. Morris in the chair), the report of the directors and accounts were received and adopted. Details in another column.**

**At the Bear's Tin Streaming Company adjourned special meeting, on Monday (Mr. Fember in the chair), it was unanimously resolved that it was expedient to be carried out by the creation of new shares, in substitution for the 10,000 preference shares created at the meeting held in Jan., such new shares to entitle the holders to a preferential dividend of 10 per cent. per annum, and also to a further dividend *par passu* with the ordinary shareholders. A special meeting will be convened for the purpose of passing the necessary resolutions. Details in another column.**

[FROM A CORRESPONDENT.]

**GREAT WHEEL VOR.**—Having just returned from a visit to the Great Vor Mining district, it is pleasing to be able to state that at no period during the present working of the Great Wheel Vor has the Wheel Metal lode been so rich for mineral. An agent of good practical experience was underground there on Wednesday last, who valued the different ends driving on the course of the lode at 750 1/2, per fathom, the 184 ends (the deepest levels) being nearly as rich as any of the others, and Ivey's shaft being worth for its length 225 1/2, per fm., so that the total value of the network bargains, exclusive of the stopes, may be stated in round figures at 1000 1/2, per fm. In the district the shares are considered likely to advance considerably, as the ground being laid open monthly is five or six times greater in value than the monthly returns.

**WEST WHEEL VOR.**—Here the engine, a new 50, by Harvey and Co., will go to work in about three weeks. The shaft is down 15 fms. below the adit, or 30 fms. from surface, on the Carmichael lode of Great Wheel Fortune, but no lode has been taken below the adit level. When the engine is at work the lode (on the back of which for the last 15 fathoms the shaft has been sunk diagonally) will be taken down, and from the indications when it was last seen, in cutting plat, &c. in the adit level, the agent confidently expects a good course of tin. There are several other lodes to the north of the engine-shaft—Great Metal lode, Metal south lode, Oats's Backbone lode, &c., all which will be intersected by a cross-cut in the 15 fathom level, and the engine is of sufficient power to develop all the lodes as deep as the 120 fathom level. A great advance on the present price of these shares (which at 30s. per 4000 1/2 is only par) is certain the moment any discovery, however small it may be, is made here. The cost of the engine and buildings has been provided for, and after it is completed, the cost of the network bargains, exclusive of the stopes, may be stated in round figures at 1000 1/2, per fm. The shares are held by parties conversant with mining, and the manager is Capt. J. Southey, who was brought up as a miner under his uncle, the late Capt. Joseph Lyle, so that there is every reason for believing this concern will be vigorously, judiciously, and economically developed.

**EAST WHEEL VOR.**—Here good progress is being made in sinking the shaft, and in driving on the course of Old Wheel Vor main lode, which is large and tinny throughout in the shaft and 60 west, and highly promising in the 50 east, &c.—in fact, the lode shows every indication of becoming very valuable for tin at the next level, as well as in extending the present levels. A parcel of good quality tin will be sold before the next pay-day, and it is expected to realise an amount equal to about one month's cost, so that a slightly increased production of tin will soon place this mine in a cost-paying, if not in a dividend-paying position. Here there is 4000 1/2 to 5000 1/2, in hand, so that with prudence, economy, and vigorous management it may be looked upon as ere long a certain dividend property. Shares can now be had at 11 10s. to 2 1/2, although issued at 5 1/2, so those who avail themselves of the present depression by buying at current rates can hardly incur the risk of loss.

**SITHNEY METAL** is looking much as usual in the Old Metal part; but on the eastern boundary, near East Vor, on Metal lode, it is reported there are in a shaft a few fathoms from surface some fine branches of tin, worth 100 1/2, or 15 1/2, per fathom. These shares must be well worth attention at their present low price of 11 10s. to 2 1/2, the situation of the mine being such as to justify the expectation that it must eventually prove a great success. Shares a few months ago were freely marketable at 6 1/2 10s. to 6 1/2, and doubtless will be so again before Midsummer, 1865.

**THE LONDON ASSOCIATION OF FOREMEN ENGINEERS.**—The ordinary monthly meeting of this society took place on Saturday, at its rooms in Doctor's Commons, City. The business transacted, however, was principally connected with the position and prospects of the institution. The auditor's report for the preceding half-year was read, and it demonstrated, that numerically and financially, steady but appreciable progress was being made. The number of members, honorary and ordinary, was stated to be over 100; and looking at the fact that the ranks of the association can only be recruited from the classes of employers and principal foremen, this is assuredly a gratifying fact. The funds amounted to about 400 1/2. A proposition for amending the rules induced an animated discussion, some of the speakers believing them to be too rigidly exclusive, and others that they were too conveniently

elastic. The two most important points were as to the extreme limit of age at which new members should be admissible, and the proportion of affirmative votes necessary to carry an election. Finally, it was determined that no candidate for ordinary membership could in future be received after he had attained the age of 50 years, and that a majority of votes in the proportion of four to one should be substituted for the unanimous vote hitherto required.—Mr. J. Newton (who presided) strongly urged upon his fellow-associates the necessity for their production of a regular series of papers, to be read at the meetings to be held during the ensuing winter. Without these, he said, the literary and scientific character of the society would be placed in jeopardy. The library was materially added to by the presentation of a complete set of volumes of the *Building News*, Mr. Passmore Edwards being the donor. Some new members were elected, and at 11 o'clock the meeting was dissolved.

**KING'S COLLEGE, LONDON.**—Professor Leone-Levi's Course of Evening Lectures at King's College are to be commenced on Thursday, when an introductory lecture "On the present state and prospect of the rate of discount" will be delivered. The courses will then be continued regularly on the following Mondays and Thursdays, at 7 p.m., and will consist of: Commerce—four lectures on the commercial crisis of 1826, 1836, 1847, and 1857; eight, on the cotton, wool, silk, linen, sugar, tea and coffee, corn and provisions, and iron and coal trades; four, on railways and canals, shipping, post-office, and telegraph; four, on coinage, banking, weights and measures, Board of Trade and Chambers of Commerce. Commercial Law—eight lectures on the law relating to shipowners, masters and seamen, charter-parties, bills of lading, wrecks, marine insurance—the policy, representations, average, total loss, &c.; four, on the law of partnership and joint-stock companies, banking and insurance companies; two, on the law of bills of exchange and cheques; and four, on the duties of belligerents and neutrals.

**COOKING WITHOUT FIRE.**—M. Babinet, of the Institute, has just laid before the Academy the result of some experiments. His recipe is—"Place your foot in a black pot, covered with sundry panes of glass, and stand it in the sun. The water soon boils, and the food is said to be of better flavour than if cooked in the ordinary way."

**THE BANK RETURNS.**—This week's Bank returns have been regarded so unfavourably as to adversely affect the value of all descriptions of stock. The chief item referred to is the serious decrease in the "reserve;" but when it is stated that the whole of the salaries of Government officers, clerks, &c., are payable quarterly in gold and notes, and therefore deducted from the "reserve," a considerable proportion of this diminution is satisfactorily accounted for.

**RAILWAY CALLS.**—The amount falling due in October is 1,543,050 1/2—making the total called in ten months of 1864, 12,098,468.

LEAD ORES.

Sold on the 30th September.			
Mines.	Tons.	Price per ton.	Purchasers.
Miners	100	£14 6 0	Walker, Parker, & Co.
ditto	100	14 0 0	ditto
ditto	91	14 0 0	ditto
ditto	100	14 0 0	ditto
ditto	48	14 0 0	ditto
ditto	21 1/2	14 6 0	ditto
ditto	21 1/2	14 6 0	Brymbo Co.
ditto	8	11 0 0	Walker, Parker, & Co.
Sold on the 1st October.			
Dylliffe	64	13 16 6	A. Eytton.
ditto	40	13 14 0	Newton, Keates, & Co.
Sold on the 4th October.			
Great Laxey	100	25 7 6	Trefry's Trustees.
Maesnyafn	70	14 5 0	Brymbo Co.
ditto	70	14 2 6	ditto
Sold on the mine.			
New Laxey	7 1/2	14 15 0	Sims, Williams, & Co.
ditto	7 1/2	14 15 0	Walker, Parker, & Co.

**ROMAN GRAVELS LEAD MINING COMPANY.**—The following is a return of the Lead and Blende Ores sold by this company during the quarter ending September 30:—  
Tons. c. lbs. Amount.  
Lead ..... 66 12 0 ..... £205 15 6  
Blende ..... 12 0 0 ..... 42 0 0

BLENDE.

Sold on the 30th September.			
Mines.	Tons.	Price per ton.	Purchasers.
Miners	110	£2 0 0	W. Kenrick.
ditto	20	5 3 0	H. Southern.
ditto	6	3 11 6	Vivian & Sons.
ditto	12	6 3 6	W. Kenrick.
Sold on the 4th October.			
Great Laxey	300	3 19 0	Vivian & Sons.

BLACK TIN.

Sold on the 28th September.			
Mines.	Tons. c. lbs.	Price per ton.	Amount.
Cuddra	6 0 0	£61 10 0	£369 9 10—
Sold on the 1st October.			
Podan-drea Utd.	8 0 0	8	489 0 7—Carvedras.

COPPER ORES.

Sold on the 4th October.			
Mines.	Tons.	Price per ton.	Purchasers.
Great Laxey	130	£3 13 0	Pocket Nook Co.

COPPER ORES.

Sampled Sept. 31, and sold at Tabb's Hotel, Redruth, Oct. 6.

Summary Sept. 21, and sold at 1200 1/2 Market, London, Oct. 6.					
Mines.	Tons.	Price.	Mines.	Tons.	Price.
Clifford Amalgamated	113	£4 7 0	East Pool	47	£2 0 6
ditto	88	9 10 6	ditto	37	4 16 6
ditto	77	3 0 6	ditto	35	2 8 0
ditto	76	4 9 6	ditto	22	3 15 0
ditto	76	4 14 6	Wheel Basset	66	5 9 0
ditto	73	6 17 0	ditto	62	11 16 0
ditto	71	9 3 6	ditto	42	4 17 0
ditto	65	10 11 0	South Tolgu	58	8 1 6
ditto	63	4 5 0	ditto	55	3 15 0
ditto	64	2 9 6	ditto	47	3 14 6
ditto	62	2 17 6	Doleath	47	4 11 6
ditto	28	4 15 0	ditto	49	4 9 6
ditto	18	3 16 6	ditto	24	6 0 0
Consols	42	9 8 6	South Crofty	54	2 15 0
ditto	33	7 9 6	ditto	31	1 14 6
ditto	3	40 3 6	ditto	24	5 13 6
Wheel Soton	69	4 17 0	West Tolgu	69	7 1 6
ditto	61	5 13 6	ditto	60	7 1 6
Pendarves	89	3 15 6	North Crofty	60	6 4 0
ditto	79	4 10 6	ditto	35	6 13 6
ditto	78	1 6 6	East Basset	46	5 13 6
ditto	70	6 16 0	ditto	43	6 9 0
ditto	65	8 0 0	Tincroft	68	3 2 0
West Soton	69	4 13 0	ditto	12	10 16 6
ditto	64	4 12 6	New Treleigh	40	2 18 0
ditto	62	4 10 6	ditto	12	5 17 0
ditto	60	3 17 0	Carn Camborne	34	3 3 6
ditto	66	8 12 0	ditto	31	7 8 0
ditto	61	8 0 6	Condurrow	32	4 16 6
ditto	60	4 3 6	Crano	15	10 14 6
ditto	48	5 0 0	ditto	12	5 7 0
East Pool	75	6 15 6	Camborne Vein	13	2 4 6
ditto	67	3 4 6	Illogan Mines	5	1 18 0
ditto	54	2 19 6			



## WATSON AND CUELL'S MINING CIRCULAR.

WATSON AND CUELL,  
MINING AGENTS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

Messrs. WATSON and CUELL having made arrangements for transferring their weekly Circular, which has had so large a circulation during the past ten years, to the columns of the *Mining Journal*, their special reports and remarks upon Mines and Mining, and the state of the Share Market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. Watson, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium published in 1843 Mr. Watson was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. Watson and Cuell have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share-dealing than there is at present; and, from the lengthened experience of Messrs. Watson and Cuell, they are emboldened to offer, thus publicly, their best services to all connected with mines or the market, as they have for so many years done privately, through the medium of their own Circular.

Messrs. WATSON and CUELL transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt, and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

Messrs. WATSON and CUELL also inform their clients and the public, that they transact business in the public funds, railways, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

Messrs. WATSON and CUELL are almost daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

Messrs. WATSON and CUELL having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are enabled to supply shares in all the best mines at close market prices, free of all charges for commission.

**SOUTH DARREN.**—We understand that this mine is looking very well. It was inspected about a month ago by an agent, who reported that the 30 fathom level west had been driven nearly 45 fathoms, in a lode worth 12*l.* to 45*l.* per fathom, the end being worth 25*l.* per fathom, and that the 40 (which was a long way behind the 30 fms. level end) had been driven about 13 fathoms, in a lode worth 10*l.* to 35*l.* per fathom, the end being worth 30*l.* to 35*l.* per fathom. In the 30 there were about 23 fathoms in length of this ore ground standing whole, for 9 fms. high, and 8 fms. in length for 3 fathoms high; while in the 40 the ore ground was untouched from level to level. The 20 has opened many fathoms of moderate lead ground, but is now disordered by a cross-course, the same having occurred in the 30. The 50 is nearly under the ore ground in the levels above, and the lode in the end already produces a little lead and copper. In both the 20 and 50 early improvements are expected. The 30 and 40 have maintained their value since the inspection, and when the wine between these two levels is communicated (in about three months), it is said that the returns can be considerably increased, and as the mine is already nearly paying cost, good profits would then be made. As the levels advance into a high hill, the ends are a good deal more from surface than their numbers indicate—those being calculated as at the shaft. The mine is situated in the rich district of Cardiganshire, with two dividend mines adjoining it.

**WHEEL CREBOR** continues to look well. At Cock's shaft the lode is 7 ft. wide, and if ore comes in shares will take another good start. The sampling will be 120 tons of ore, worth 600*l.* to 700*l.*

**EAST BOTTLE HILL.**—The reports of Capt. Charles Thomas and others show there is a very valuable property here, but in these dull times it is almost useless calling attention to anything, however good.

**LEAWOOD.**—The engine is expected to be at work by the 21st instant, and in a fortnight after that they will probably have drained the 20 under adit. Looking at the ore in the lode, where seen in the adit, important discoveries may be anticipated at a deeper level, even in the 20, particularly under such a splendid gossan.

**THE MARKETS.**—The state of affairs at present is just this—everybody seems to want money, and tries to sell whatever he holds in order to get it; but there is not enough in the market to supply all, and those who have it hoard it for high rates and good security; and the consequence of there being so many sellers of stocks and shares is that no one will buy, and a species of panic ensues. Things, however, will soon right themselves, and, perhaps, be all the better for a little purging; and when things have got to their lowest will be the time to pick up bargains. We have experienced these sort of times before, and the reaction is generally in proportion to the previous dullness.

**SCOTTISH ENGINEERS.**—The seventh volume of the "Transactions of the Institution of Engineers in Scotland," containing the papers read and the discussions thereon during the session 1863-4, has just been issued by Messrs. Bell and Bain, of Glasgow. The volume is admirably illustrated, so that the several papers are rendered thoroughly intelligible. The financial position of the institution is all that could be desired, and the advantages accruing from the labours of the society are daily becoming more generally recognized.

**QUARTERLY JOURNAL OF SCIENCE.**—The original articles contained in the October number are particularly interesting, especially those by Mr. William Fairbairn, "On the Construction and Mechanical Properties of Submarine Telegraph Cables," and by Dr. Odling, "On the Proportional Numbers of the (Chemical) Elements." In Mr. Fairbairn's paper the entire subject is treated with such care, and in such detail, that much may be done toward preventing the probability of future failures. The great importance of Dr. Odling's paper is to be found in the circumstance of its being a systematic comparison of ascertained facts, with judicious observations as to the manner in which they may probably be turned to account. The other original articles are—on Radiant Light and Heat, by Mr. Balfour Stewart; on the Sources of Living Organisms, by the Editor, Mr. James Samuelson; on the Formation of Coral, by Prof. Duthiers; and on Butterflies of Madagascar, by Mr. Rowland Trimen. The Chronicles of Science are compiled with particular care, and the Reviews, Notes, and Correspondence, are of the usual interesting character.

**POPULAR SCIENCE REVIEW.**—The principal original article in the Oct. number is that upon the Metric System, by Mr. James Spear, in which the advantages are very clearly and carefully pointed out. The other original articles are—Extraordinary Ships, by Mr. Mackie; Good Food, by Dr. Lankaster; on the Origin of Local Flora of Great Britain and Ireland, by Harland Coultas; Metamorphism, by Prof. Ansted; the Morphological Peculiarities of Linaria spuria, by Mr. Magrath; Recent Investigations into the Natural History of the Red Coral, by the Editor; and What is a Stimulant? by Dr. F. E. Anstie. Amongst the reviews, perhaps the most interesting is the allusion to the "Passages from the Life of a Philosopher (?)," a book containing the complaints of an unsuccessful inventor, whose scheme the Government, after sufficient investigation, and supplying a certain amount of funds, abandoned as a project indefinitely expensive, of problematic ultimate success, and of such a nature that the cost of rendering it of any practical utility did not admit of calculation. Algebraically speaking, the negative quantity of Mr. Babbage's success with "the nifty organ grinder" is added to the positive quantity of his failure in connection with the calculating machine, and the sum is a moderately readable book. The Scientific Summary contains a good account of the progress of the several sciences during the three months under review, and the entire book is well calculated to maintain the reputation it has already acquired.

**PRESERVATION OF WOOD.**—The following method is used in Germany for the preservation of wood. Mix 40 parts of chalk, 40 of resin, 4 of linseed oil, melting them together in a iron pot; then add 1 part of native oxide of copper, and afterwards, with care, 1 part of sulphuric acid. The mixture is applied while hot to the wood by means of a brush. When dry it forms a varnish as hard as stone.

**EXPLOSION OF A LIME-LIGHT APPARATUS.**—The *Scientific American* writes that at a political meeting in New York, on Sept. 8, among the attractions a lime-light was exhibited, and soon after the light was kindled a portion of the apparatus exploded, seriously wounding two women, one of whom has since died. The light was prepared by Mr. Robert Grant, and in his testimony he states that the cylinder which exploded contained pure oxygen, with a mixture of 1-12th part by measure of illuminating gas, compressed by a force of 15 atmospheres, or 200 lbs. to the square inch. In taking the apparatus to the ground the jet pipe was bent so as to expose it more than usual to the heat, and in this way the explosive mixture was set on fire.

**THAMES TUNNEL COMPANY.**—Receipts for the week ending October 1, 1864, 6*l.* 6*s.* 6*d.*; number of passengers, 15,849.

## MINING FINANCIAL ASSOCIATION (LIMITED).

TO THE DIRECTORS OF THE MINING FINANCIAL ASSOCIATION (LIMITED).  
GENTLEMEN.—The first point I shall refer to in my report this week is the fact that the shares purchased last week are already sold at a profit. We do not say at a large profit, for that is not what we require. We particularly wish that our clients buying of us should do well by their investments, and so return to us to help to well use their profits.

Business generally in mining matters has been more than usually dull this time of year, as compared with that of last year. Perhaps this has partly arisen from the high rate of money and the great demands and inducements to speculators to invest in discount, financial, and a great number of other schemes. It will, doubtless, take some time for the usual amount of speculation in mines at this time of the year to flow on evenly in its accustomed and generally prosperous course.

When joint-stock and other banking establishments have taken a vast number of securities not worth the money advanced upon them, and, in their eagerness for business and rivalry, shall have departed from the strictest rules of good management and prudence, then a great fall in the value of such shares will take place; and let us hope that the money will find its way into the more certain mining world.

I have no doubt that many will contradict my assertion that mining is more certain than banking and other shares; but I will explain myself, by saying that when a mine is situated in a good district, has valuable reserves, is opening out profitable ground, is paying good dividends, shares may be bought to pay 14 per cent. Gentlemen, you can always tell at the bi-monthly or quarterly meetings of such a mine exactly how the mine stands. You have receipts and expenditure on each side, and you can see how you are progressing exactly. I contend with a bank it is far different. Look at the enormous advances to customers of our banks. Suppose a commercial panic to arise, suppose an inefficient or careless manager, and where is the fancied security of our banks? May be there may be more than one bank in the country similar to the late one in the West Riding of Yorkshire.

Now let me turn to our actual work during the week, which is fully marked out by the letters and reports on the table before you. Much of my time has, you will see, been occupied with arranging about the price we should take shares at, but I consider now that the principal of that arduous work is over.

I wish to bring now to your notice the papers and reports relating to Wheel Golden and Penhale. My own time has been too much occupied to go carefully through them. This mine is in the now celebrated Chiverton district, and the small sett once worked as Lomax is now included in the present sett. I would advise in this matter that two of yourselves be appointed to assist me in thoroughly investigating the merits of this property. I trust also with the Lygonian Mine, the papers relating to which are also before you, that the same rule be observed. I knew well the Old Combarmin Mine, and therefore I did not consider this course in that instance necessary. With regard to this mine, I cannot help repeating my firm opinion that it will be a second West Chiverton or Laxey. I find in the first three years of the working they returned over £8000 worth of ore, and in the last working nearly £65,000. North Devon is going on exceedingly well, and the dressing-floors are now being enlarged, though they are now, I am sure, fully capable of returning 50 tons per month.

Among other mines, I may mention a great improvement in Kelly Bray. This has been one of the great improvements of the last month. Should it continue, it will make this long-struggling mine a successful one.

Everything with us is going on to my perfect satisfaction, and we are now in the full channel of business. We are already making profits, and our capital is nearly untouched. No one, after going through our letters, and seeing our business, would doubt for a moment that this association will be a lasting success.

I have the honour to be, Gentlemen, your obedient servant,

EDWARD JAMES GIBBS.

Offices, No. 32, Walbrook, London, E.C., October 7, 1864.

## THE CHILIAN MINING AND TRADING COMPANY

(LIMITED).

Incorporated under the Companies Act, 1862, with limited liability.

Capital £340,000, in 17,000 shares of £20 each.

Deposit on application £1 per share, and on allotment £4 per share.

Calls not to exceed £5 per share, and at intervals of not less than three months.

In the event of no allotment being made the deposits will be returned in full.

DIRECTORS.

JOHN VANNER, Esq., Coleman-street (a Director of the City Bank).

JAMES ALFRED HALLETT, Esq. (Messrs. Hallett, Osmannery, and Co., Bankers), Great George-street, Westminster.

Rees Admiral G.O. GREVILLE WELLESLEY, C.B., 10 Wilton-street, Grosvenor-place.

THOMAS WOOD HEATON, Esq., Bolton.

RAMPSON WATERS, Esq., Gyllyngdune, Falmouth.

WM. MULLER, Esq., 11, Southwick-crescent, Hyde Park-square (of the firm of A. Hemenway and Co., Valparaiso).

THOMAS GARLAND, Esq., Fairfield, Redruth, Cornwall.

HENRY KENDALL, Esq., 12, Old Broad-street (Peruvian Consul).

WILLIAM FAWCETT, Esq., Salisbury (Chairman of the East Canadian Mining Company).

(With power to add one to their number.)

BANKERS.—The City Bank.

The Consolidated Bank (Limited), Manchester.

The Liverpool Union Bank, Liverpool.

Messrs. Tweedy, Williams, and Co., Truro.

SOLICITORS.—Messrs. Stuart and Massey, 5, Gray's Inn-square.

BROKERS.

London..... Messrs. Webb, Genth, and Pennington, 8, Finch-lane, E.C.

Manchester..... Messrs. Mewburn and Barker.

Liverpool..... Messrs. S. R. and R. Healey.

Leeds..... Messrs. Potter and Co.

SECRETARY (pro tem.)—Henry Elford, Esq.

OFFICES.—83, UPPER THAMES STREET, E.C.

(Formerly the Mines Royal Office.)

## ABRIDGED PROSPECTUS.

This company is formed for the purpose of purchasing and working two copper mines in Chili, called Descubridora and San Pedro, and of acquiring certain valuable freehold premises, plant, and stores, together with an existing trade in connection therewith at the ports of Chancal and Pan d'Auscar, and a distillery of water from the sea.

The profits for the year 1863, arising from the mines and other sources of revenue, have been at least £75,000, estimating three unsold cargoes at 18*s.* 6*d.* per unit. The ore has been sold in England, by Messrs. Frederick Heath and Co., of London and Liverpool, whose accounts may be seen at the offices of the company.

It thus appears that the net profits to the company may be estimated at upwards of 20 per cent. per annum, with a prospect of increase as the mines become further developed.

Two cargoes of ore, containing about 1000 tons, have already arrived to the account of the company, and three cargoes, containing about 1500 tons, are on the way.

A copy of the Memorandum and Articles of Association can be inspected at the offices of the company, and of the solicitors.

Detailed prospectuses, and forms of application for shares, can be obtained at the offices of the company, of the bankers and brokers to the company, and of the solicitors.

## THE ISLE OF MAN SLATE QUARRY AND GOLD MINING COMPANY (LIMITED).

Incorporated under the Companies Act, 1862, which limits the liability of each shareholder to the amount of his shares.

Capital £160,000, in 160,000 shares of £1 each.

Deposit on application 2*s.* 6*d.* per share, and 2*s.* 6*d.* on allotment.

No call to exceed 2*s.* 6*d.* per share, and an interval of not less than six months between each call.

A less number than 100 shares will not be allotted.

DIRECTORS.

Capt. R. J. MARSH, R.N., Cottage Moun, Ramsey—CHAIRMAN.

Capt. EWEN CAMERON, Glenfaba House, Peel.

SAMUEL BROADBENT, Esq., Bilsdale, Orkney, near Douglas.

JOSEPH HIGGINS, Esq., Peveril-terrace, Peel.

LESLIE LOCKHART, Esq., H.M. Customs, Peel.

Capt. G. RUSSELL, 103, Albany-street, Regent's-park, London.

JOHN MORGAN, Esq., Wainham Lodge, Shrewsbury.

(With power to add to their number.)

MANAGING DIRECTOR—Henry Johnson, Esq., Norfolk House, St. John's, Isle of Man.

BANKERS.—The North and South Wales Bank, Liverpool.

The National Provincial Bank of England, Shrewsbury.

SOLICITOR AND SECRETARY—C. Hicks, Esq., Shrewsbury.

REGISTERED OFFICE.—MARKET CHAMBERS, SHREWSBURY.

## ABRIDGED PROSPECTUS.

This company has been established for the purpose of acquiring and working a most extensive and valuable mineral property, called the Glenrusher and Dalby Slate and Slab Quarries, situated in the parish of Patrick, in the southern district of the Isle of Man.

The property on which the quarries are opened consists of 6900 acres, nearly the whole of which is proved to be composed of slate rock, equal in quality to any produced from the best quarries in Wales.

This immense property, which it is believed is the largest slate sett in the kingdom, and likely to become one of the most valuable, is held under a lease from the Crown for the term of 21 years, at a reduced royalty of 1-18th, of which term 19½ years are unexpired.

A large sum of money has been spent in opening out and proving the value of their property, not only at the principal quarries at Glenrusher, but also on about 30 different parts of the sett, and these trials have proved "as stated in the report of Capt. John Francis, of Penryn, North Wales, under whose direction and advice these trials were made" that "almost the whole grant of 7000 acres is composed of slate-rock, and capable of having from eight to ten different quarries opened upon it."

The machinery and plant are very valuable, consisting of water-wheels, sawing mills and cutting machines, tramways, dressing sheds, offices, smiths and carpenters' shops, machine house, and other buildings; and there are several cottages erected, with a dining room and other conveniences for the accommodation of the quarrymen.

The sett has been inspected by Capt. John Francis, as before stated, and by Mr. W. R. Williams, of Delgely, mining engineer, Capt. Thomas and Robert Williams, of Coodport, Denbighshire, and several other practical men, all of whom speak thereof in the highest terms.

The colour of the slate is a fine dark blue, the grain close and compact, the texture good, the lamination fine and silky, and the cleavage very good and straight.

There is also a very promising vein of green slate, which Capt. Francis recommends should be proved by driving a level into the rock, and if it turn out as well as anticipated will prove a very good green quarry.

In addition to the slate there are several veins or reefs of auriferous quartz traversing a portion of the sett, near to the Foxdale district, which it is believed will prove a valuable acquisition to the company. Portions of the quartz have been assayed by Messrs. Johnson and Sons, of London, Mr. Samuelson, of Liverpool, and other public assayers, with results varying from 1 oz. 2 dwts. 20 grs. to 5 dwts. of fine gold to the ton of quartz, and from the report of Mr. W. R. Williams there is every reason to expect most profitable results.

The quarries are about three miles from the shipping port of Peel, but when the projected railway from Douglas to Peel is completed they will be within a mile and a half of the intended station at Kirkpatrick, to connect them with which a loop-line will doubtless soon be formed.

Only £20,000 of the capital remains to be allotted.

Specimens of the slate may be seen and prospectuses and forms of application for shares obtained at the offices of Messrs. LITTLEDALE, RIDLEY, and BARDWELL, solicitors, Brown's-buildings, Liverpool; or at the registered office, where the original reports and map of the quarries may be inspected.

FORM OF APPLICATION FOR SHARES.

To the Directors of the Isle of Man Slate Quarry and Gold Mining Company (Limited).

GENTLEMEN.—Having paid to your bankers the sum of £..... I hereby request that

you will allot me shares in the Isle of Man Slate Quarry and Gold Mining Company (Limited), and I hereby agree to accept such shares, or any smaller number that may be allotted to me; to pay the deposit, allotment, and calls thereon, and to become a member of the company; and I authorise you to place my name on the register of members for the shares which may be allotted to me.

I am, Gentlemen, Name in full.....

Address in full.....

Profession or business (if any).....

Place of business (if any).....

Date.....

## Notices to Correspondents.

**CREASE'S BORING-MACHINE.**—It has been stated in the Journal that the boring-machine invented by Mr. Crease has been found to work very efficiently; but there are several particulars which I have not seen mentioned. It has not been stated the number of men whose work the machine is equal to, the price of the machine, nor the cost per hour of keeping it at work. All these being items which it is very desirable should be known, perhaps some of your readers could give them for general information. J. C. B. Oct. 6.

**SAFETY-CAGES FOR COLLIERIES.**—The recent accident at Madeley Wood affords another instance of the necessity for the use of safety-cages in colliery and stone pit-shafts to be made compulsory. Here is an instance of no less than nine lives being sacrificed by an accident which a couple of safety-catches, that could have been applied for a few pounds, would have prevented. Can any of your readers state whether the Madeley Company intend continuing to work without safety-cages, and also whether a list of safety-cages in use could be obtained?—A. W.

**GLAN-R-APON SLATE QUARRY (Llangydog).**—I should have treated the intimations of "Farmer" versus "Coodport" with contempt, had it not been for the imputations made, or rather pseudo-made, against the above quarry. It seems strange to me how such questions should be tendered to one who takes on himself the task of writing a review of the district. I could, with as much propriety, ask "Farmer," What do you give your servants to eat, wheaten bread or barley? How often do you take your pigs to market? How many pounds of butter do you make? And many such-like questions. I have the secretary's authority for saying that they pay regularly. The company is an able one, and, no doubt, will open the quarry extensively, which they are well justified in doing.—SAMUEL JENKINS, Quarry Inspector.

**GLAN-R-APON SLATE QUARRY.**—I was surprised to see an article in the Journal of Sept. 24, signed "Coodport," respecting the pay of the men at the Glan-r-afon and Gribben Slate Quarries. Truth needs no concealment. For the information of "Coodport" and the readers of the Journal, I beg to state that the men at these quarries have been regularly paid their wages monthly, and from a letter I have received this week from the captain there have been no complaints whatever.—FREDERICK DAVIS, Secretary, Llanidloes, Oct. 5.

**MR. N. ENNOR—GOLD IN WALES, No. 1.**—During the present week my engagements take me from home, so that I have but very little time to sit down. I have to attend a business which I hope will bear an important part in the future well-doing of mining; the particulars of which I shall let you have for next week's Journal. I have my reply to Mr. Nicholas Ennor nearly ready to send, and with your permission will do so in next week's Journal also.—EDWARD DAVIES, Dolcarradog, Machynlleth.

**GREAT SOUTH CHIVERTON.**—While I am exceedingly gratified to find that the development of this property is satisfactorily progressing, I am much grieved to hear—but I hope there is no truth in the rumour—that one of those to whom the shareholders have entrusted the management of the company's affairs has swerved from a certain compact, and thereby created an unpleasant dissension. Of course, this cannot in any way affect the property itself, but, at the same time, it is to be feared that it will militate—if, indeed, it has not already done so—against the general well of the enterprise.—A SHAREHOLDER.

**OTEA COPPER MINING COMPANY.**—If the shares of this undertaking were ever worth the high premium at which they at one time were readily marketable, it would seem that it is now, machinery having been dispatched to the mine, and most favourable reports as to the intrinsic value of the property having recently been received. Doubtless, it would be a most unjust inference to suppose that the shares have sustained so serious a depreciation in value, simply because they are not allowed the privilege of quotation in the official list, and it would be equally unfair to imagine that anything had transpired in connection with the company to the slightest degree shake public confidence; but still it would be most gratifying to shareholders to know even the assigned reason of this hitherto unexplained circumstance—the drop in the price of shares from 2½*l.* and 3*l.* premium to no price at all, at least no quotation is ever published.—A MEMBER OF THE STOCK EXCHANGE.

**ADVERTISING MINE MACHINERY, &c.**—I notice in last week's Journal an advertisement for the sale of a valuable copper mine, machinery, plant, &c., but it is not stated where the property is situated, or when it is to be sold. It is stated that the lease has 31 years to run. If the property belongs to a limited liability company, and is situated, as I suspect it is, in Ireland, and the liquidator is desirous of disposing of the property for the benefit of the shareholders, it seems strange that the size of the engine, crusher, &c., is not given, with every particular as to the property and its situation, so as to induce parties to become purchasers.—A SHAREHOLDER: Cork.

**SHARE DEALING.**—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

THE MINING JOURNAL.  
Railway and Commercial Gazette.

LONDON, OCTOBER 8, 1864.

## THE ORIGIN OF THERMAL SPRINGS.

At the recent meeting of the British Association at Bath, Prof. DAUBENT read a paper on "The Bath Waters," in which he recapitulated many of the results obtained by his investigation of this water in 1832, and gave an account of the views he entertained as to the origin of thermal springs generally. Disclaiming any intention of entering into a consideration of the causes to which the medicinal virtues of the Bath water are referable, he pointed out that they could not have been inferred from the knowledge hitherto possessed of the substances contained in the water, but must be regarded, as in the case of other varieties of mineral water, merely as established upon the testimony of the many persons who have from time to time experienced benefit from its use. Under the impression that some yet undiscovered substance might be contained in the Bath water, Prof. DAUBENT has examined large quantities of it, by means of the delicate optical test introduced by BUNSEN and KIRCHHOFF, but he was unable to discover any trace of either barium, strontium, lithium, or fluorine. The only substances, not hitherto detected, and whose presence he found reason to suspect, were phosphoric acid and bromine; he mentioned, however, that Prof. ROSCOE had detected lithium, barium, and copper in the Bath water. The point to which Prof. DAUBENT chiefly directed his attention was the quantity and quality of the gas discharged together with the water. At the King's bath, the quantity of this gas varied between 80 and 530 cubic inches per minute, the average during one month being 267 cubic inches. Hence he inferred that the quantity of gas issuing from this source could not be less than 222 cubic feet in 24 hours. This discharge of gas appears to have continued from a very remote period, and GUIDO, who wrote on the Bath waters in 1696, described how they "bubble up, as if from a cauldron." In this respect, the discharge of gas at Bath appears to correspond with other instances of gaseous emanations, which are apparently connected with volcanic phenomena, and where no change in their intensity has been noticed since a period anterior to the Christian era.

From this fact and others of a similar kind, it may be inferred, reasoning from analogy, that the evolution of gas with the Bath water is not due to any adventitious cause, but is essentially connected with the existence of the heat which characterises the water. Prof. DAUBENT also considers that this inference is confirmed by the nature of the gas discharged. Leaving out of consideration the carbonic acid contained in this gas, and amounting sometimes to 13 per cent. of the whole, though generally only 4½ per cent., the remaining portion of the gas consists of nitrogen and oxygen, the two main constituents of the atmosphere, but in proportions very different from those existing in the atmosphere, for while in this case the oxygen amounts to about one-fifth the volume, and the nitrogen to four-fifths, there is not in the gas discharged with the thermal water at Bath more than 4 per cent. of oxygen associated with about 20 times its bulk of nitrogen. If, therefore, the gas emitted be derived from atmospheric air, four-fifths of its oxygen must have been abstracted before the gas reached the surface of the earth. This peculiarity in the relation existing between the amount of oxygen and nitrogen in the gas evolved with the thermal waters of Bath is not an isolated phenomenon, but is common to all natural springs where water has a temperature decidedly in excess over that belonging to the locality where they occur. It cannot, therefore, be referred to any local circumstance, but must be regarded as a phenomenon of general importance in regard to the connection now acknowledged to exist between thermal springs and volcanoes.

Nitrogen is also a constant constituent of the gas discharged from volcanoes, both in their active and dormant condition; and whenever the gas is discharged, together with water, the amount of oxygen contained in it is less in



On Friday last an officer from the Japanese Government visited Stavropol, accompanied by a Japanese engineer, to inspect the coal-mining and heavy Works, for the purpose of making a tour of inspection. He was accompanied by his private secretary, and was conducted down the Speedway and Seymour pits, accompanied by Mr. Markham, the managing director, and Mr. Seymour, the resident viewer of the works. The party proceeded to view the seams of coal, and the mode of working the same, the drawing apparatus, screening the coal, &c., and the distinguished foreigner was highly pleased and astonished to a degree with what he had seen. At the



conclusion of the inspection, the party partook of luncheon at the new Dining Hall. We understand it was the intention of the party to visit the armour-plate works at Sheffield, and the manufactory of steel shot, with the view to report the same to the Japanese Government.

There is great activity going on at the new works in Derbyshire, which are being sunk for getting the deep coal. At Pilsley the new shaft of the Clay Cross Company has been got down about 140 yards, and all of it has been well lined with iron tubing. We hear that at the new works at North Wingfield an accident has happened by the falling in of a quantity of brickwork in the shaft.

There is a report of another large colliery in Derbyshire being merged into the limited liability system. The capital, it is said, will come from Manchester and the neighbourhood. The Staveley Company, and the success which is attending their efforts, appear likely to be the means of introducing the formation of many other public companies.

The local share markets have been very dull ever since the Leeds Bank affair, and great fears have at times prevailed regarding the commercial stability of many apparently successful firms. There is literally nothing doing in the market for mining shares.

#### THE PRESENT CONDITION OF THE LABOUR MARKET—THE PRODUCER AND THE CONSUMER—No. IV.

BY GEORGE SHEPHERD, C.E.

A few years ago a celebrated knot of politicians brought a bill into the House of Commons to regulate the weight at which newspapers should be sent by post in England and to the colonies. These gentlemen, in a fit of spleen against the *Times*, so arranged that when that newspaper published a double supplement an additional charge had to be paid for postage. These politicians, no doubt, laughed in their sleeves at their achievement; but, to the honour of the proprietors of the *Times*, those gentlemen did not attempt to reduce their workmen's wages to meet the emergency; they simply cut the Gordian knot with the pen, and told "public good," as it stood by, and did not protest against this piece of political trickery, the public must pay the additional charge imposed by their legislators. This is a step in the right direction. The iron and coal masters must also adopt the same course, to protect their workmen, so as to induce them to remain in England; and let the public, or the consumers, protect their workmen in a similar manner. On the mining districts, and on the skilled colliers and miners, hang the great mercantile interests of not only England, but also that of the whole world; therefore, to lose our valuable colliers is to lose our all. At any sacrifice they must be kept out of the hands of the foreigner.

Certainly in taking this course "public good" cannot raise an objection. Both ironmasters and workmen have laboured long enough to supply iron at low prices; and in doing so the masters have banished the workmen from the country to the extent that a skilled workman is now a scarce article: this the masters know to their cost. Therefore, to the demands of scarcity "public good" must bow its head; and it will have to bow still lower each year, and to submit to still higher prices than even the present. It is not now a question what a workman ought to have in England, but what he can get in other parts of the world, that has to be considered; and each year this question will force itself more fully on the mining community of England. As the demand for labour increases, and as skilled workmen are so scarce in all parts of England, it is clearly to the interests of the masters to endeavour to conciliate their workmen by wise concessions in this case of emergency. The late reduction in the price of iron was a mistake on the part of the masters; they at the time of this deduction well knew the temper of the men and their leaders. The great fluctuations in the iron trade are its curse and bane. When the price of iron commences to fall purchasers stand aloof, and the price goes still lower and lower, and with it the workmen's wages. The article then becomes a drug on the market, and while the trade is prostrate consumers purchase from hand to mouth; this keeps down the price. So it has been for years; but it is not likely to be the case again—the workmen will take care of that. We may ask why should the workmen permit themselves to be reduced to dire poverty and degradation, merely for the sake of supplying the public with iron at a cheap rate? Why should the nation expect it from them? I should like some one to answer this question. The political economist would say, the cheaper the iron the more we shall sell. This is no answer to the question. If the price of bread were reduced to 1d. the 4lb. loaf, people would consume no more than if it were 5d.; and if the price of iron were reduced to 12, per ton, no more of that article would be consumed than at present. There is a certain quantity of iron required for consumption each year, with a gradual increase in the quantity annually; this consumption would be the same even were the price of iron fixed at a rate at which the ironmaster could pay his workmen wages that would keep them and their families in comfort; and the world is not so poor that it cannot afford to remunerate our workmen for their dangerous toil in the bowels of the earth.

The cause of the strike in Staffordshire is 6d. per day—or that the masters want to reduce the men's wages 6d. per day. Now, the thick coal colliers alone get 5s. per day in Staffordshire; but the masters must, or ought to, know that it is a very sorry collier indeed who cannot at the present moment earn his 5s. per day in the thin coal seams of South Wales, and even in Wales colliers are now very scarce. Therefore, in order to induce your workmen to return to their work concede the 6d. per day; and to guard against future strikes, let masters and men fix a minimum rate of wages, and a minimum price of iron and coal, for times of depression in the trade. This would protect the workmen and masters from the everlasting source of enmity caused by fluctuations in trade and wages, and, so far as I can see, all interests would be equally protected. Our political economists may argue as they please, but they must bear in mind this fact, that no nation is so prosperous, no people so happy, no country so thriving, as that community where both workmen and masters receive the honest worth of their industry. While keen competition, in whatever form it may take, only can lead to one result—degradation, distress, bankruptcy, and ruin.

Let us look at the converse of this. Suppose the masters remain obstinate, and the men are compelled to go to work at the reduced wages—the masters, fighting for "public good," gaining the victory—it will be one of the ugliest victories ever won. It would be the means of uniting the whole of the men in the mining districts throughout England in one vast league against their employers. From the letters I have now before me, the struggle between the masters and men in Staffordshire is being watched with intense interest on the part of the workmen in other districts. From this the masters will see what their victory, if they obtain it, is likely to cost them ultimately. I should, therefore, say, be wise in time: repentance comes too late—an article always too dearly purchased. It may be said that underselling would upset the fixing the minimum prices in iron and labour for times of depression in the trade, as some works can produce iron cheaper than others. I should say, leave such delinquents to the men: they have their Unions, and these institutions they will not give up so long as the masters continue the present fluctuations in the price of iron; nor will the Legislature interfere so long as the men respect the laws of their country.

One argument may be adduced—that should the ironmasters adopt this course, the orders for iron will go to Belgium. Let us see: this question is also rapidly solving itself. I see by the Journal that the Lowmoor and other works are now employing Belgian workmen: this is a step in the right direction. The inviting Belgian workmen to England will draw off the surplus workmen from that part, and prevent competition, so far as Belgium is concerned. I would, therefore, earnestly entreat the English workmen to give their foreign fellow-labourers a hearty welcome, and to treat them with every possible respect and kindness. By doing so the Englishmen will not only protect their own interests, but that of their masters also. I admit the arrangement pointed out cannot be effected by the masters in a day; therefore, I would earnestly entreat the masters to give way, and let the men return to work at their old rate of wages, and give themselves time to arrange for the future. Only let both parties understand each other in good faith, and I think the men will see nothing unreasonable in this proposal.

In giving my views on the present crisis, I do not think either masters or workmen can accuse me of partiality on one side or the other. I have endeavoured to point out what appears to me to be the only course now open to produce harmony between these now conflicting interests. The longer the master and the workman are estranged from each other the greater will be the loss to the former and misery of the latter. The past is irretrievably gone; and, perhaps, what has occurred is all for the best. We have now to deal with the future, and the future must be moulded

from the present. This can only be accomplished by conciliations, and holding out inducements for the men to remain in England.

In concluding this paper, I would respectfully call the attention of the masters to the following extract from a letter in the *Times* of Sept. 19, signed "A Real Irish Landlord":—"Our farmers are prosperous wherever they are industrious, our labourers are as well paid as in England; indeed better, for they are so scarce that you have to give them their own terms. Our merchants are perfectly coining gold. The over-abundant labour, both in our mining districts and in Ireland, brought masters and men to distress." Now they are evenly balanced Ireland is prosperous.

This is my case; further comment is needless. A great deal may be done, without cost, to endear our workmen to their country and homes. This I must leave for future consideration.

#### THE TIN TRADE.

The upward tendency which we reported in our last circular made further progress during the first few days of the past month, and rather higher prices were paid for some small parcels, in order to establish a price; but this spirit was of short duration, as several holders were found ready to supply the demand, and operators, finding it quite impossible to absorb all that was offered, stopped suddenly, which caused a heavy reaction. The price for Straits again touched 100, per ton, at which a large business was done on the spot and for forward delivery; but the continued stringency in the money market which followed could not help influencing quotations, and, as several holders continued to press their tin for sale, prices had to be accepted lower than during the crisis of 1857. The fall in foreign could not long remain without its influence on England, and as our smelters doubtless feared that the demand for their produce would soon fall off, they reduced the price of refined and common 84, per ton. Since the commencement of this year we have continually drawn the attention of operators to the dangerous position of the article, and we do not see, at the present moment, any signs of its prospects changing for the better. Our stock shows again a considerable increase, and though consumption has been better during the last fortnight than for a long time past, the supply is not only fully equal to the demand, but even surpasses it. The deliveries in Holland certainly appear good compared with former years; but as over 7000 slabs have simply changed warehouse from Holland to London, the deliveries, in fact, are very unsatisfactory. The last advices from the Straits, strange to say, report continued large shipments, although the fall in our market was known there. From Singapore 50 tons had actually been shipped, and from Penang 180 tons were in course of shipment, the cost in both places being about 110l. delivered here, although there had been a slight decline from the prices ruling at the departure of the previous mail, and at this the merchants there were competing with each other to secure the available supply. We may naturally expect that each mail arriving at both Singapore and Penang will take reduced limits, and it is to be hoped that those from England will have been so far reduced as to be based on the actual and prospective value of the article in this market, for no signs are at present apparent of any falling off in the supply. The quantity of tin here and in Holland on Sept. 30 was as follows, compared with the three preceding years:—

	1863.	1862.	1861.
Stack in Holland .....	84,950—2720 ..	94,636—3220 ..	93,287—2900 ..
Arrived for next sale ..	38,996—1250 ..	35,762—1145 ..	31,697—980 ..
Stock here .....	3666 ..	2485 ..	1870 ..
Total tons .....	7636 ..	6880 ..	5750 ..

The quantity of tin now about for England is 986 tons, against 874 tons last year; and to the Continent 141 tons.

ENGLISH TIN.—The demand was fair during the first fortnight of the past month; the fall in foreign caused the smelters to reduce the price, on Sept. 16, 3l. per ton, both in common and refined, since which the demand has fallen off, and prices are irregular.

STRAITS, which early in the month stood at 103l. cash and 104l. 10s. prompt, advanced to 104l. cash and 106l. 10s. prompt; but a reaction set in, and little business was done between the highest price and 100l. per ton, at which about 200 tons changed hands, cash, one, two, and three months' prompt; from this there was a gradual decline to 97l. per ton cash and 98l. open. During the last eight days the market has assumed a firmer tone, and prices have crept up again to 98l. cash and 100l. full prompt, at which we closed with a steady market.

BANCA.—During the beginning of September prices ruled between 104l. and 105l.; the market followed the decline in Straits and English, and the lowest point touched was 98l., since which the price has recovered to 99l.—our closing quotations. The Dutch market has been steadier, and the lowest point reached was 60½ l.; but it is difficult to buy now even at 61 l. The official returns from Holland are as follows:—

	1864.	1863.	1862.
Stock on warrants .....	Slabs 98,900 .....	100,089 .....	105,406 ..
Delivered .....	18,950 .....	5,453 .....	12,119 ..
Stock on warrants, Sept. 1 ..	84,950 .....	94,636 .....	92,287 ..
Arrived towards next sale ..	38,996 .....	35,762 .....	31,697 ..

The arrivals of tin in London during September have been as follows:—Straits, per "Hindostan," 1048 slabs; ditto, per "Eleanor," 2386; ditto, per "Ema," 153; Banca from Holland, 7450; total, 11,037 slabs. Also, 1350 slabs Banca to Bristol, and 500 to Liverpool. Making since Jan. 1 into London—

	1864.	1863.	1862.	1861.
Banca .....	Slabs 28,897 .....	18,037 .....	9,523 .....	7,910 ..
Straits .....	55,413 .....	31,710 .....	56,481 .....	58,507 ..
Total .....	84,310 .....	49,747 .....	66,004 .....	66,417 ..

We estimate the present stock of tin in warehouse here at 3666 tons. The import and export of tin during the month of August and the first eight months of this year, compared with 1862 and 1863, has been as follows:—

Month ended Aug. 31.			Eight months ended Aug. 31.		
1862.	1863.	1864.	1862.	1863.	1864.
£89,173 ....	£85,744 ....	£65,699 .....	£729,618 ....	£753,081 ....	£751,371 .....
VON DADELZEN AND NORTH.					

The export of tin from Singapore between July 22 and Aug. 20 was to—Great Britain, 873 packages; to Continental Europe and America, nil. From Penang there were no actual shipments—price \$33-45.

TIN-PLATES.—Demand extremely dull, especially for charcoal. Coke steady at 28s. in London, and 22s. 6d. in Liverpool. The declared value of tin-plates exported during the month of August last and the first eight months of this year, compared with 1862 and 1863, has been as follows:—

coal. The reply was, that with regard to the wharfrage room that could not be extended until the Government were in possession of the land. Upon the completion of the new steam-dredge it would be used in deepening the channel near the wharves. The late Coal and Copper Company's shafts would probably revert to the Government through some arrangement with the natives, and would be worked by the Government. It was

VON DADLAGE and NORTH.

THE NEW SOUTH WALES COAL TRADE.—INCREASED COAL SHIPPING ACCOMMODATION.—The Secretary of Public Works has been waited upon by a deputation of gentlemen interested in the shipping trade of Newcastle, and recommended certain improvements to be made in the arrangements for shipping coal. The reply was, that with regard to the wharfage room that could not be extended until the Government were in possession of the land. Upon the completion of the new steam-dredge it would be used in deepening the channel near the wharves. The late Coal and Copper Company's staiths would probably revert to the Government through non-compliance with conditions, and would be resumed by the Government. Vessels will be henceforward booked to load as they arrive, and in the order in which entry may be applied for. The question of providing blast-lighters for hire was one which should be left to private enterprise. The return for the week ending July 17 was 5996 tons, whilst two months previously the weekly average was only about 3000 tons. Thanks were given to Mr. Holroyd for his satisfactory explanations, and the deputation withdrew.

It appears that the disposal of the wharf frontages to private companies was vigorously opposed by Mr. Keene, the Government Examiner of Coal Fields, on the ground that the Government ought not to alienate for a few thousand pounds frontages worth approximately twenty times what they would then realise; but the colliery proprietors now very reasonably say that they should think of the present, and provide for the emergencies of the day, instead of advancing a problematical and chivalrous idea of the blessings to future generations.

ANTHRACITE AS A LOCOMOTIVE FUEL.—The result of long practical trial on the Pennsylvania and Reading railroad is that anthracite, when properly used, surpasses every fuel that has yet been applied to locomotive purposes. It is considered that the idea "that anthracite will not do" is just as fallacious as it is unjust to the experience of scientific men, who, in their construction of engines on which it is alone used, have fully proved its excellence. By slightly modified arrangements almost any engine can be converted into a coal-burner. The trials of the Schuylkill anthracite affords conclusive evidence of its utility, and that, with an average of six cars attached, the coal consumed per mile was under 25 lbs.; that the number of miles ran per trip was 95; that the trips were all run with "exhaust" and "throttle" wide open, the speed of the engine being regulated by the reverse lever. Twenty-two stops were made between Philadelphia and Pottsville, the speed being nearly 26 miles per hour; the maximum grade on road 224 ft. per mile; the average inclination of road 6.16 ft. per mile. The average weight of the train was upwards of 80 tons. We understand that on his recent visit to Portugal Mr. Nicholas Ennor procured some samples of an anthracite coal, which he anticipates may be successfully employed for the purposes of steam generation. It is at present used in the locality of the workings mixed with English coal in about equal quantities, and is considered to be well suited for smelting iron.

SOMERSETSHIRE COAL FIELD.—Among the many pages of print to which the recent meeting of the British Association has given birth, not the least interesting, in our own carboniferous district, are those which Messrs. G. C. Greenwell (Poynton) and J. McMurtrie (Radstock) have dedicated to an account of the Somersetshire coal field, and more especially of the Radstock portion of it. The whole field extends from Bristol to near Frome, and from the Mendips Hills to the suburbs of Bath, comprising an area of 150 square miles, 45 of which are occupied by the Radstock district. The hand of industry, now so busy in reaping its stores, has been at work upon it, on the surface and underneath, for centuries. Radstock manor has for one of its boundaries a Roman road. The lead miner has been at work in the Mendips Hills from the dawn of history. Before Bosworth Field was fought he was there in such numbers, according to records in the possession of the Waldegraves, that we must use five figures (10,000) to express them; and coal-mining has been prosecuted, with more or less activity, from the same distant period. Our mineral fuel—our coal—everywhere invited our ancestors to its use. Peeping out to the day, it asked them to take and try; and appropriations on the surface led the way to seizures deeper down. In the district under consideration the coal seams present themselves in every variety of posture, from horizontal to vertical. They have even, in some places, turned summersaults; and a seam may be met with so eccentric as to over-lap—doubling over upon itself—so that the miner, in sinking his shaft, perforates it twice! The existence of any seams at all under the manor of Radstock was not formerly dreamt of. Some imaginative miners may have been absurd enough to hint at such a thing; but an old collier, who knew better, and who was kept in countenance by all reasonable men, made a vow "that if ever coal were found in Radstock he would get on the top of

Norton tower and see down it"—an operation much more easy than said. Strange to say all reasonable men, the old collier included, were in the wrong; coal was found in Radstock, a hundred and one years ago; and the flight from the tower became due and demandable. But possibly the bones of the rash pitman had been secured by death from the fate which must otherwise have befallen them; for there is no record of him having climbed the tower and redeemed his pledge. Radstock turned out to be, in the wonder of the neighbourhood, one of the most valuable mineral properties in the district; and when, some sixty years ago, engines were brought into play for the hauling of coal, and the quantity was increased to 50 tons a day, "it quite frightened people;" but they got over it—and over still greater feats in time. "The world," as a sensible old built remarks, who supplied Messrs. Grenville and McMurtrie with the tradition, "do get wiser if it don't get better"—a distinction which does credit to the discriminating caution of its venerable author; and he who would know how much more "wisely" and "prudently" coal-mining is carried on now than formerly, let him listen to the interesting paper, and compares their results with those of more recent times." (the paper, which is all we have further to add, is being printed by Messrs. Lambert of our own town.)—*Newcastle Daily Chronicle*.

THE STRIKE OF COLLIERIES IN STAFFORDSHIRE.—Lord Leigh, the Lord-Lieutenant of Warwickshire, is now making a great effort to bring about a settlement of the dispute between the men and their masters. He met some of the leaders of the men on Tuesday afternoon, at Dudley; and on Wednesday his lordship, accompanied by Colonel Mansel, met them by appointment at the Hen and Chickens Hotel, in Birmingham. On Tuesday his lordship mediated between a number of the masters representing the whole trade, and seven of the colliers representing the men who are out. The masters and the men did not meet, although they assembled in the same house, the communications between them being carried on by his lordship on behalf of the men. The conditions which Lord Leigh has proposed to the masters were that they would at once resume work on the terms in force at the time they "left off," and continue at work on those terms up to the end of the month, if after that time the masters would concede the advance; but the masters were unwilling to accept the conditions, and proposed instead that the men should return to work for the wages that were offered to them, the masters undertaking to watch for the first opportunity to advance the price of iron and increase the colliers' wages. To this proposition the men would not accede, and Lord Leigh then endeavoured to prevail upon the chief member of the workmen's deputation to induce the men to accept the employer's terms. Here, again his lordship was unsuccessful. He then desired the same man not to place any obstacle in his way if he should himself appear amongst the men and endeavour to prevail upon them to cease the struggle. It was replied that his lordship's progress of success with the men would not be very great. Nevertheless, it is thought that he will interpose thus actively. Lord Leigh is not, however, encouraged to do so by the masters, for they regard the strike as virtually at an end. The men are "dropping in" very perceptibly, as well in the district, where they have been upon strike now nearly 14 weeks, as in that to which the strike has only recently extended. Companies to the number of 40 each have returned to the pits in the former locality in a few instances during the past few days. Whilst they have been welcomed in most instances, still there have been cases in which the employers have been disposed to keep them out till the beginning of next week. The difficulty is by no means at an end, but it is so far over as to leave but little doubt that it will not much longer exist.

THE MADELEY WOOD COMPANY'S IRONSTONE PIT ACCIDENT.—The inquest upon the sufferers who lost their lives by the detaching of the chain at the Lane or Brickkiln Leasow pit has resulted in a verdict of "Accidental Death." Joseph Vaughan, the engine-driver, deposed that on Sept. 27 he received the signal to pull the men, and when they were about half-way up the shaft, which was about 240 yards deep, he felt the weight go off the engine. He then heard the honest strike the end of the working. Whilst witnesses were going to the bottom, Joseph Morris, who went down the pit after the accident, said that when they got to the bottom they found the scaffolding over the sump broken through. There was water in the sump—he should think about 12 ft. deep. They could not get the bodies, but three men and six boys were afterwards got out with a drag. It could only be supposed that the link of the double was not properly put into the hook. Mr. Wynne, the Government Inspector, considered this the only likely cause of the accident. The hooker-on was an experienced man, and had filled the office for 20 years.

HOW COAL MINE EXPLOSIONS ARE CAUSED.—An inquest was held at Ashton-under-Lyne, on Wednesday, touching the death of Alfred Jackson, a collier, who died from the effects of burns received from an explosion at Lords Field's Colliery, Ashton-under-Lyne, belonging to Messrs. Garforth, of Dukinfield. Thomas Price, the waggoner for the deceased, stated that he had worked three night shifts, and was about to commence work at seven o'clock on the morning of July 25, in a cut from one level to another. The men had told them there was foul air in the cut, and they turned a ventilator which had been placed at the end of the working. Whilst witnesses were turning the ventilator the deceased came to him and lighted his pipe, and an explosion immediately took place. Samuel Crossley, the foreman, explained that the effect of turning the ventilator would be to draw the foul air upon the men in a cloud. The witness said the underlooker never told him there was sulphur, nor did he give him a copy of the rules. When he got to work on Monday there was no board marked "fire," or any writing on apades. He did not know that it was a general rule that the workmen were not to commence work until an inspection had been made by the foreman. He did not know he was doing wrong in turning the ventilator. John Harrison, the underlooker, gave evidence that the deceased had worked four or five years at the pit, and well knew the regulations. After considerable discussion, a verdict of "Accidental Death" was returned, the jury, however, recommending that more conspicuous signals should be used.

MANUFACTURE OF TUBES, RODS, AND PLATES.—According to the invention of Mr. G. P. Harding, an expanding die or draw-plate is used, by means of which conical or cylindrical tubes, or tubes of octagonal, square, or other section, outside of different sizes, may be drawn. The machinery employed is composed of a cast-iron box, in which is inserted four loose pieces of metal, with slots to receive four draw-plates. The tube is drawn over a mandrel, and through the draw-plates fixed (say) at 1 inch diameter; but as the drawing proceeds the draw-plates expand by the action of the driving pinion on the bevelled wheels and screws, and if the original reduction of the tube by the draw-plates be ¼ inch, it can be lessened gradually to nothing in 6 inches, 12 inches, or more of length, so that, by repeating the reduction, conical tubes with a cylindrical bore would be obtained in a single run throughout. In order to obtain a tube conical both internally and externally, it employs a mandrel tapered to the cone required, and a tube slit in four places at one end, with an inner tube also slit, projecting a short length beyond the outer one.

ZINC FOR COINAGE.—If our chemists should ever cease to be fascinated, as they seem to have been of late years, by the organic, to the exclusion of the inorganic, branch of their science, it is to be hoped that they will then fully investigate the subject of metallic alloys. We just now generally take the properties of most metals are greatly modified by admixture with other metals, and that a very slight percentage of admixture will often produce most important results—the electric conductivity of copper containing 2 per cent. of arsenic, for example, being less than one-sixth of that of pure copper; but our knowledge of the properties of definite admixtures even of the metals with which we are most familiar is exceedingly limited. In this direction very wide scope is awaiting the explorer, and one in which results of great industrial importance have, doubtless, yet to be reaped. Mr. Peligot, the chemist to the French Mint, has lately made some slight excursions into this field. On account of the continued rise in the value of silver causing the progressive disappearance from circulation of the old silver money, the French Government is about to lower the standard of its silver coinage by the addition of about 7 per cent. more copper. The coinage which it is about to issue will contain 165 parts of copper to 835 parts of silver—unless, indeed, Mr. Peligot's recent experiments should lead to the use of zinc instead of copper wherewith to alloy the more precious metal. His experiments undoubtedly show that alloys of silver and zinc possess considerable physical advantages over the corresponding alloys of silver and copper, while they are, of course, sensibly cheaper, since the market price of copper is more than four times that of zinc. An alloy of silver and zinc, in the proportions of the (new) standard alloy of silver and copper above specified, Mr. Peligot found to be appreciably whiter than the copper alloy, while it is also "remarkably malleable" and "perfectly homogeneous when rolled." He experimented also on alloys of silver and zinc in atomic proportions, and found that both an alloy of one equivalent (or 108 parts by weight) of silver with one equivalent (or 32 parts by weight) of zinc, and an alloy of two equivalents (or 216 parts) of silver with one equivalent (32 parts) of zinc, are readily malleable, while alloys containing either two equivalents of zinc to one of silver, or three equivalents of zinc to two of silver, are too brittle to be rolled. All the alloys of silver and zinc upon which he experimented are more fusible, more sonorous, and more elastic than alloys, in the same proportions, of silver and copper; and when those of them which are malleable have had their malleability impaired by hammering, it can be readily restored by simple heating. Moreover, the zinc alloys have over the copper alloys the very great advantage of no verdures being formed by the contact with them of acid liquors, and the equally great advantage of not being nearly so readily discoloured by sulphuretted hydrogen, or other sulphuretted compounds. Mr. Peligot, indeed, states that an alloy of 800 parts silver with 200 parts of zinc will preserve its whiteness in a solution of a polysulphide, in which the standard alloy of silver and copper would soon become quite black. Zinc would thus certainly seem to be better adapted than copper to alloy silver with, for coinage; with some of the alloys of silver and zinc above mentioned—especially that of 800 parts silver with 200 parts zinc—should be worth the attention of silversmiths and other producers of ornamental metal-work.—*W. W. : Mechanics' Magazine*.

CLEVELAND IRON.—The manufacture of iron from the Cleveland ironstone has had to struggle hard in competition with that made from richer ores, and it is only for certain purposes that it is equally good, whilst the market price is always lower than Staffordshire or Scotch. About two years ago, the General Manganese Company of Ehrenbreitstein, owners of extensive mines in Nassau, first called the attention of the ironmasters of the North to the use of manganese ore in the blast-furnace as a flux and alloy, which has been employed recently in the Hauts Fourneaux of Germany with important results. In Germany, as in Cleveland, the iron ores are poor for the most part, and the attention of the ironmasters there was first directed to manganese, from the weaker ores, available to the chemical manufacturer, lying in heaps of thousands of tons through the mining districts, without any use for them being known. It is a singular and interesting feature that the qualities rejected by the chemist are recommended to the ironmaster. The poorer that manganese ore becomes in peroxide of manganese, the greater the percentage of peroxide of iron, until they become almost equal in the "Mineral de Fer Manganésifère," as they call it, which contains 25 to 30 per cent. of the former, and 20 to 25 of the latter. The addition of this ore to the ironstone, in proportions varying up to 20 to 30 per cent., was found to increase the product materially beyond what was expected. Acting as a flux, less heat was required for fusion, and a saving of fuel was effected; the metal being more fluid, the scorification separated more easily, and it was purer and softer, qualities which for some purposes were so far appreciated that it was exported to this country, and obtained much higher price than Scotch or Staffordshire iron. The attention of the ironmasters of the North having been drawn to this process, it has been tried first on a small and then on a large scale, with complete success. The addition of manganese ore to the Cleveland ironstone in the blast-furnace renders it equal to any ironstone in the kingdom for certain purposes. Convinced of this, Messrs. Bolckow and Vaughan, of Middlesbrough, at the close of last year, bought up the rights to this mineral manganese, and encouraged the mining of it in Nassau, by contracting to receive during the year about 25,000 tons. The example set by so eminent a firm would have been more extensively followed by others, but there was no need to be had for the working at the mines of the company we have referred to. The metal made from these manganese ores is more especially suitable for foundry purposes. Its fluidity adapts it to fine castings, and its softness to engine castings, the saving in time and tools in turning



**TO INVENTORS AND PATENTEES.—A GENTLEMAN**  
 having an extensive connection with manufacturers, merchants, and others,  
 would be GLAD TO UNDERTAKE the SALE of INVENTIONS or PATENTED AR-  
 TICLES, on commission.—Apply to Mr. RAWLE, patent office, 14, Clare-street, Bristol.  
 N.B.—Continental and foreign agencies solicited.



**MINERALOGY—KING'S COLLEGE, LONDON.**—  
Professor Tennant, F.R.S., will give, during the ensuing season, TWO COURSES OF LECTURES ON MINERALOGY, with a view to facilitate the study of GEOLOGY and of the APPLICATION OF MINERAL SUBSTANCES to the ARTS. One course will be given on Wednesday evenings, from Eight till Nine, beginning on October 13th; fee, £1 11s. 6d. A more extended course will be given on Wednesday and Friday mornings, from Nine to Two, beginning on Friday, October 7th; fee, £2 2s. R. W. JELF, D.D., Principal.

#### Gun Cotton Manufacture.

**MESSRS. THOMAS PRENTICE AND CO.,**  
GREAT EASTERN CHEMICAL WORKS, STOWMARKET, SUFFOLK.  
This manufacture has been established for the purpose of preparing GUN COTTON, according to the Austrian process, and was opened on the 26th of January last, under the inspection of Baron Lenk. Messrs. Thomas Prentice and Co. are now able to SUPPLY GUN COTTON, in its most approved form, either for the purposes of engineering and mining, or for military and submarine explosion, and for the service of artillery, as a substitute for gunpowder.

The advantages of Baron Lenk's GUN COTTON are the following:—  
For PURPOSES OF ARTILLERY.—The same initial velocity of the projectile can be obtained by a charge of gun cotton one-fourth of the weight of gunpowder. There is no smoke from the explosion of gun cotton; it does not foul the gun, nor heat it to the injurious degree of gunpowder. There is much smaller recoil of the gun. The same initial velocity of projectile is produced, with a shorter length of barrel. In projectiles of the nature of explosive shells it breaks the shell more equally into much more numerous pieces than gunpowder. When used in shells, one-third the weight of gun cotton produces double the explosive force of gunpowder.

For CIVIL ENGINEERING AND MINING.—In driving tunnels through hard rock a charge of gun cotton of given size exerts double the explosive force of gunpowder, thus a smaller number of holes is necessary. It may be so used, as in its explosion, to reduce the rock to much smaller pieces than gunpowder, and so facilitate its removal. As gun cotton produces no smoke, the work can proceed much more rapidly, and with less injury to the health of the miners. In working coal mines the advantages of bringing down much larger quantities of material with a given charge, and the absence of smoke in the explosion, enable a much greater quantity of work to be done in a given time at a given cost. The weight of gun cotton required to produce a given effect in mining is only one-sixth part of the weight of gunpowder. In blasting rock under water the wider range and greater force of a given charge is a great element in cheapening the cost of submarine work. The peculiar local action of gun cotton, to which the effects of gunpowder show no analogy, enables the engineer to destroy and remove submarine stones and rocks, without the preliminary delay and expense of boring chambers for the charge.

For MILITARY ENGINEERING.—The facility of transport is increased, the weight of gun cotton being one-sixth that of gunpowder. The peculiar localised action of gun cotton facilitates the destruction of bridges and palisades, and every obstacle. For submarine explosion, gun cotton has the advantage of a much wider range of destructive power than gunpowder. For the same purpose gun cotton, from its lightness, has the advantage of keeping afloat the water-tight case in which it is contained, while gunpowder sinks it to the bottom.

For NAVAL WARFARE.—In the batteries of ships, between decks, and in casemated forts, the absence of smoke facilitates continuous rapid firing. The absence of fouling and of heating are equally advantageous for naval as for military artillery. Gunpowder, as a propellant, is liable to the disadvantages of the qualities of the patent gun cotton. It has already been preserved 10 years without injury or decay. It can be transported through fire without danger, simply by being wetted, and when dried in the open air it becomes as good as before. In the case of a ship, or a fortress, or a city being on fire, this quality may be of the greatest value. It is much safer than gunpowder, owing to its being manufactured in the shape of rope or yarn. It cannot escape from its package, or be spilled by accident. The patent gun cotton is entirely free from the danger of spontaneous combustion, and secures that degree of safety and certainty which, at the time of the original invention, the gun cotton of Schönbeld did not possess.

Messrs. Thomas Prentice and Co. are now in a position to contract with the owners of mines, engineers, contractors, and others, for the supply of gun cotton, prepared in the various forms required for their use. Mining charges will be supplied in the rope form, according to the diameters of bore required, and gun cotton match-line, as well as instructions for using it in mines, will be supplied with it.

The great advantage of gun cotton make its use in practice very much cheaper than its comparative price would appear to show; in blasting rock, for example, the rapidity and quantity of the work done, with a given expense of wages, &c., is largely in favour of gun cotton.

Messrs. Thomas Prentice and Co. are also prepared to manufacture the gun cotton, and deliver it in the form of gun cartridges, adapted to every description of ammunition; all they require for this purpose being a drawing of the gun, gunpowder cartridges, and ammunition, with the specification of weights, sizes, and initial velocities.

Artillerists who prefer to manufacture their own cartridges may make special arrangements with the patentees through Messrs. PRENTICE and Co.

Stowmarket, March 10, 1864.

#### NEW COMBINED TURBINE, WINDING, AND PUMPING MACHINERY.

MANUFACTURED BY GEORGE LOW, MILLGATE IRONWORKS, NEWARK-UPON-TRENT.

Who respectfully begs to bring the above to the notice of the mining public, as an exceedingly cheap and easy method of applying water power for the above purposes.

The TURBINE, WINDING, AND PUMPING MACHINERY are all fixed complete to one strong cast-iron bed plate, which can be placed in any situation without pit or excavation, and any height not exceeding 33 ft. from bottom of fall, the supply and suction pipe being all that is required to be connected to it, and can be brought in any direction. This combined machine can be easily removed when necessary.

G. Low begs also to state that the TURBINE is the most efficient and the cheapest method of applying water-power for mining purposes.

MANUFACTURER OF WINDING, PUMPING, CRUSHING, STAMPING MACHINERY, WINDING ENGINES, WATER WHEELS.

IMPROVED TURBINE WATER WHEELS CONSTRUCTED EITHER TO WORK VERTICALLY OR HORIZONTALLY, AND UPON THE MOST SCIENTIFIC AND EFFECTIVE PRINCIPLE.

G. Low begs to recommend a special class of turbine adapted for extreme high falls (300 to 500 ft.), and consuming small quantity of water. This turbine will work with equal advantage without running at an excessive velocity. Also, MANUFACTURER OF IMPROVED BORING MACHINES FOR DRIVING ADITS.

#### MINING OFFICES, MANCHESTER.

**MESSRS. HARVEY AND CO., MINING ENGINEERS, AGENTS, AND SHAREDEALERS, CLARENCE CHAMBERS, MANCHESTER,** are at all times in a position to deal in all the market dividend and progressive mine shares, and also to advise on all mining matters, being practically acquainted with the business, and having a daily communication from the mining districts of Devon and Cornwall.

Messrs. HARVEY and Co. publish a monthly "Mining Circular," containing a valuable summary of mining information. Forwarded gratis on application.

The Circular for October contains a report on East Seston, Wh. Prosper, and Margaret.

#### CAPT. C. WILLIAMS, TYN-Y-WERN, TALIESIN.

via SHREWSBURY, has had upwards of 20 years' practical experience in mining, during which time he had the entire management of several English and Welsh mines. Residing in the centre of the CARDIGANSHIRE MINING DISTRICT, and in close proximity to those of MERIONETHSHIRE and MONTGOMERYSHIRE, he OFFERS HIS SERVICES TO SURVEY AND REPORT UPON ANY MINE.

#### CAPT. C. WILLIAMS has FOR SALE EIGHTY SHARES

in the CWMYNYLOG UNITED MINES. No reasonable offer will be refused. These mines adjoin the Great Darren to the east, having the same strata and run of veins; and the course of ore now reported at the latter mine to yield 15 cwt. of ore per fathom is within a short distance of the former mine.

Capt. WILLIAMS is at all times in a position to give reliable information to capitalists respecting mines in which they should embark or avoid.

Tyn-y-Wern, Taliesin, via Shrewsbury, October 4, 1864.

#### MR. BRENTON SYMONS INSPECTS AND REPORTS ON ANY MINERAL PROPERTY.

In all cases where procurable a plan will accompany his report.—15, Hatton-garden, E.C.

#### MR. BRENTON SYMONS is now engaged in PREPARING A GEOLOGICAL MAP AND SECTION OF THE MINERAL COAL FIELD AND LEAD MINING DISTRICT, for publication by subscription.

He OFFERS HIS SERVICES TO INSPECT AND REPORT ON ANY MINING PROPERTY in the neighbourhood.—Address, Miners Lead Mines, Wrexham.

#### BRITISH AND FOREIGN INVESTMENT.

MR. THOMAS SPANCO, STOCK, SHARE, AND MINING BROKER, 224 and 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C., TRANSACTS EVERY DESCRIPTION OF BUSINESS IN THE PURCHASE AND SALE OF SHARES IN BANKS, CANALS, MINES, RAILWAYS, BRIDGES, INSURANCES, AND ALL OTHER DESCRIPTIONS OF BRITISH AND FOREIGN STOCK.

Mr. SPANCO has for sale shares in English mines paying from 15 to 20 per cent. upon the present price, in 12-monthly and quarterly dividends, as also a number of shares in good progressive mines, some of which he with confidence specially recommends to the public as sound investments.

Mr. SPANCO gives every information as to position and prospects of all mining undertakings, upon application, either personally or by letter, and is enabled, through his long experience, aided by his monthly visits to Cornwall, Devon, and Wales, to obtain the most reliable information as to the numerous mines in those districts. He will, at all times give the best advice as to investment in mines, and, if necessary, inspect them himself; as in all cases he wishes to be guided by the intrinsic value of the property. Upon the receipt of 5s. he will furnish a selected list of dividend and progressive companies.

Mr. SPANCO has published the following works, viz.:—  
Statistics and Observations upon the Mines of Cornwall, 1859, price 2s. 6d.  
Ditto ditto ditto ditto ditto ditto 1860, price 2s. 6d.  
Ditto ditto ditto ditto ditto ditto 1862, price 5s.  
Ditto ditto ditto ditto ditto ditto 1864, price 5s.

Physical, Geological, and Parish Map of Cornwall. Scale, three miles to an inch. Printed in three colours, showing distinctly the mining districts, the height of the hills, &c. Price 10s. 6d., on cloth and rollers.

Geological maps of the various mining districts, showing the boundary line of each mine, with the lodes, cross-courses, and elvan courses by which it is traversed. Price 2s. 6d. each.

A Model, or Relief, map of Cornwall (6 ft. 6 in. by 5 ft.), presenting the names of every town and village, as also every characteristic point of the county. Price £5 5s.

Dividends received, calls paid, and all orders promptly negotiated. Commission 1½ per cent.

Mr. SPANCO has 20 years' experience of mining, ten of which he was engaged in practical mining, and ten years he has transacted business in mining shares and stock, at 224 and 225, Gresham House, Old Broad-street, City, E.C.

Bankers: Bank of London, and the Metropolitan and Provincial Bank (Limited).

#### MR. GEORGE HENWOOD, MINING ENGINEER,

LOCHHEAD HOUSE, LOCHWINNOCH, SCOTLAND, OFFERS HIS SERVICES AND ADVICE ON MINES SITUATED IN ANY PART OF ENGLAND, SCOTLAND, WALES, IRELAND, ISLE OF MAN, &c. Mr. Henwood's extensive experience in his peculiar department of mining science is well known, and will be exerted to the utmost for the benefit of his clients.

#### In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the WHEAL ALBION SILVER-LEAD MINING COMPANY.**—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 23rd day of September last, presented to the Vice-Warden of the Stannaries, by Richard Henry Stevens, a shareholder and contributor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at No. 79, Grosvenor-street, Grosvenor-square, London, on Tuesday, the 18th day of Oct. inst., at Twelve o'clock at noon.

Any contributor or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, or his solicitor, of his intention to do so, such notice to be forthwith forwarded to P. F. Smith, Esq., secretary of the Vice-Warden, Truro.

Every such contributor or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner or his solicitor, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before the 15th day of October inst., and notice thereof must at the same time be given to the petitioner or his solicitor.

Dated Truro, October 4, 1864. HENRY SEWELL STOKES, Truro (Solicitor for the Petitioner).

#### In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the HAMMETT CONSOLS MINING COMPANY.**—Notice is hereby given, that a PETITION for the WINDING-UP of the ABOVE-NAMED COMPANY by the Court was, on the 1st day of October inst., presented to the Vice-Warden of the Stannaries, by Jane Lawry, widow and executrix of William Cowling Lawry, deceased, who was a contributor of the said company, and that the said petition is directed to be heard before the Vice-Warden, at the College Hall, Cathedral-yard, Exeter, on Saturday, the 29th day of October inst., at Half-past Two o'clock in the afternoon.

Any contributor or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioner, her solicitors, or agents, of his intention to do so, such notice to be forthwith forwarded to P. F. Smith, Esq., secretary of the Vice-Warden, Truro.

Every such contributor or creditor is entitled to a copy of the petition and affidavit verifying the same, from the petitioner or her solicitors, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the petition, must be filed at the Registrar's Office, Truro, on or before Wednesday, the 26th day of October inst., and notice thereof must at the same time be given to the petitioner, her solicitors, or agents.

Dated Truro, October 5, 1864. HODGE, HOCKIN, AND MARRACK, Truro (Solicitors for the Petitioner).

#### In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

**IN THE MATTER OF THE COMPANIES ACT, 1862, and of the DULTA TIN MINING COMPANY (LIMITED).**—TO BE SOLD, under the direction of the Registrar of the said Court, BY PUBLIC AUCTION, on Monday, the 17th day of October inst., at Twelve o'clock at noon, at the DULTA TIN MINE, in the parish of St. Dennis, within the said Stannaries, either together or in lots, the MINE SETT or GRANT of the said company, and the undermentioned MINING MACHINERY and MATERIALS, viz.:—

ONE 20 in. cylinder STEAM ENGINE, 4½ ft. stroke, 7 tons BOILER, 12 head stamps attached, with fly-wheel and connections complete.

ONE 22 in. cylinder ROTARY STEAM ENGINE, with 6½ tons BOILER (not erected), 12 ft. WATER WHEEL (2 ft. breast), with 8 head stamps attached.

30 fms. 9 in. lifts complete, horse wheel, capstan chain, kibbles, wood roofs to 4 large sheds, stamps, strakes, taps and screws, new wood clesters, lot of building stone, a quantity of tallow, leather, grease, and tar, about 4 tons of coals, and a variety of other materials, and effects in general use in mines.

Further particulars may be had on application to the officer in possession; or to Messrs. HODGE, HOCKIN, AND MARRACK, Solicitors, Truro.

Dated Registrar's Office, Truro, October 5, 1864.

#### In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

**IN RE WEST WHEAL TOLGUS MINE.**  
**TO BE SOLD,** pursuant to an Order made in a Cause Hays v. Burrow, dated the 25th day of August last, at the Registrar's Office, Truro, on Wednesday, the 19th day of October inst., at One o'clock in the afternoon, 1 (SIXTH) PART or SHARE of the defendant, Of and in the said MINE.

(Agent for John L. Peter, Redruth, Plaintiff's Solicitor).  
Dated Registrar's Office, Truro, October 5, 1864.

**NORTHUMBERLAND—WYLAM.**  
**IMPORTANT COLLIERY, IRONWORKS, AND FIRE-BRICK WORKS, ON THE RIVER TYNE.**

**MR. PYE (under instructions from the proprietor) WILL SELL, BY AUCTION,** at the Queen's Head Inn, Newcastle-upon-Tyne, on Tuesday, the 11th day of October, 1864, at One o'clock precisely, in One Lot, A LEASE, for 63 years, of the well-known SEA-SALE and LAND-SALE COLLIERY, called WYLAM COLLIERY, the WYLAM IRONWORKS, the WYLAM FIRE-BRICK WORKS, and the WORKMEN'S HOUSES and APPURTENANCES belonging to these concerns; together with the absolute property in agreements for other royalties and privileges, and in all the VALUABLE PLANT, COLLIERY MATERIALS, and GASWORKS.

Printed particulars may be had, or other information obtained, from Messrs. T. E. FORSTER and Co., mining engineers, or Mr. R. H. DEAN, solicitor, Newcastle-upon-Tyne.

**EGLYWYSLAN, NEAR PONTYPRIDD, GLAMORGANSHIRE.**  
**IMPORTANT FREEHOLD ESTATES FOR SALE, WITH MINERALS.**

**MESSRS. W. H. WILLIAMS AND CO. WILL SELL, BY AUCTION,** at the Cardiff Arms Hotel, in Cardiff, on Wednesday, the 19th day of October, 1864, at Three o'clock in the afternoon precisely, unless disposed of in the meantime by private contract, of which due notice will be given, the undermentioned VERY DESIRABLE FREEHOLD FARMS, with the VALUABLE VEINS OF COAL, PAVING STONE, IRONSTONE, and FIRE-CLAY lying thereunder, viz.:—

All that FARM HOUSE and OUTBUILDINGS, together with 123 A. 3 R. 3 P. (more or less) excellent ARABLE, MEADOW, and WOOD LAND, known by the name of the BRYNTAL ESTATE, and adjoining the lands of Lord Llanover, the Baroness Windsor, and others, and now in the occupation of Mr. Griffiths, as yearly tenants.

Also, all that FARM HOUSE and OUTBUILDINGS, called CRAIG ALFA, adjoining the above-mentioned estate, containing 33 A. 2 R. 6 P. (more or less) of good ARABLE, MEADOW, and WOOD LAND, now in the occupation of Mrs. Davies and Mr. Wm. Davis, as yearly tenants.

Attached to the above estates are valuable rights of common.

Also, all that FEE FARM RENT of £2 a year, issuing out of a piece of land, and cottage erected, on about a quarter of an acre of the Craig Alfa estate, and payable by William Thomas.

And all the VEINS OF COAL, PAVING STONE, IRONSTONE, and FIRE-CLAY lying under the above-named estates, and which have been surveyed by well-qualified engineers, and reported to contain upwards of 7,000,000 tons of superior coal, of the valuable Maesawr or Llantwit, and the other undermentioned veins, one of which has already been developed and worked for some months; and the coal raised therefrom is conveyed by a recently-constructed railway from the colliery to the Glamorganshire Canal, by which 300 tons a day and upwards can be conveniently carried, and an easy access can also be secured to the Taff Vale Railway.

The other veins reported upon are No. 1 Rhonda, 30 yards from the surface; this vein has been recently proved; No. 2 Rhonda, 107 yards; No. 3 Rhonda, 180 yards; Abernethy, 247 yards; Aberdare Upper Steam, 300 yards; and the Aberdare Lower Steam, 370 yards; exclusive of the lower series of coal, ironstone, and blackband, which are indisputably contained in the South Wales basin.

This property is the key to a large tract of minerals at the back, and from the increased demand for bituminous coal presents more than the ordinary attractions to a capitalist, or parties forming limited liability companies.

There is a large quarry of good paving and building stone on the Craig Alfa estate, which is now worked by a yearly tenant.

The purchaser will be required to take a valuation, in the usual way, all the plant, rails, and machinery belonging to the colliery.

The tenants will show the farms, and the colliery can be daily seen on the Bryntal estate.

For all further particulars, apply to Mr. CHARLES DAVIES, Clarendon House, Aberystwyth, the owner; the Auctioneers, Exchange-buildings, Bristol, or at their offices, 81, St. Mary-street, Cardiff; or to Mr. BARBER, solicitor, Albion Chambers, Bristol.

**VALUABLE COLLIERY FOR SALE IN SOUTH LANCASHIRE, AT GERARD'S BRIDGE, NEAR ST. HELEN'S.**

**MESSRS. WILLIAM PEARSON AND SON WILL SELL, BY AUCTION (by order of the proprietors upon a dissolution of partnership, unless previously disposed of by private treaty, of which due notice will be given),** on Wednesday, the 12th day of October, 1864, at Three o'clock in the afternoon, at the Raven Hotel, St. Helen's, subject to conditions to be then and there produced, all that EXTENSIVE WORKING COLLIERY, known as the GERARD'S BRIDGE COLLIERY, long worked by the late well-known firm of Speakman and Caldwell, and now by Messrs. Caldwell and McCormick, jun., situated within half a mile of the populous and increasing town of St. Helen's, and surrounded by glass works, alkali manufactories, iron foundries, and other extensive works, ensuring a constant demand at the pits for a large proportion of the produce of the colliery at favourable prices, and within fifteen miles distance of Liverpool, where immense quantities of coal are shipped.

The St. Helen's Railway and the Sankey Canal both pass through the property, and there are colliery sidings into the main line of the railway, two pier heads at the canal, and about 400 yards of water frontage for wharfs, thus affording the amplest convenience for land and water transit direct from the pits to near and distant ports and markets.

The principal mines of coal are those known as the Little Delf, Bushy Park, Main Delf, Higher Delf, San Sebastian, and Pigeon House Mines, which are being worked from three pits, and some of these are the best mines of the district.

It is computed that the aggregate "gotten" coals will be equal to about 2,000,000 tons. The colliery is held under lease; leases and tenancies at moderate rents, and in other respects, upon favourable terms.

The purchaser will have the benefit of the overpaid royalty in one of the mines, amounting to about £3000.

The entire colliery will be sold as it is now working, including the substantially and well-fitted up winding, pumping, capstan, and other engines, engine houses, carpenters' smiths', and lamp shops, saw mill, store houses, weighing machines, head gear, pump stocks and pumping gear, canal piers, surface and underground railways, rolling stock, and all other the colliery appliances, including the railway and other wagons, horses, carts, canal boats, and stores, and also comprising the farm stock and all other effects now belonging to and in use upon the colliery. Possession may be had immediately.

For printed particulars, apply to Messrs. MARSH and BARRATT, solicitors, Warrington; Mr. S. P. CARRAN, solicitor, Prescott; to the Auctioneers, Wigan; or to Mr. THOMPSON, manager at the colliery; or to Messrs. MAYHEW and SON, solicitors, Wigan.

#### WHEAL CURTIS MINE.

**MR. J. O. MAYNE WILL SELL, BY AUCTION,** on Wednesday, the 12th day of October next, at the Royal Hotel, Truro, at Three o'clock P.M., to close an account (unless previously redeemed by payment of the amount due thereon), FIFTY SHARES (50 1000ths), subject to such conditions as will then be produced, in the WHEAL CURTIS MINE, situated in the parish of Crowan, near Camborne, Cornwall.

For further particulars, apply to the Auctioneer, at Truro; or to Mr. CATER, solicitor, Cossida, Plymouth.—Dated Plymouth, September 24, 1864.

#### PARAFFINE WORKS FOR SALE.

In consequence of the expiration of the partnership of the firms.

**THERE WILL BE SOLD, BY PUBLIC AUCTION,** within Messrs. Cay and Black's Sale Rooms, No. 65a, George-street, Edinburgh, on Wednesday, the 26th day of October next, at Two o'clock afternoon (if not previously disposed of by private bargain), the original and well-known PARAFFINE AND PARAFFINE OIL WORKS at BATHGATE, belonging to and carried on by Messrs. Meldrum and Binney, under the styles or firms of E. W. Binney and Co. and E. W. Meldrum and Co. respectively, comprising LAND, BUILDINGS, STEAM ENGINES, MACHINERY, TANKS, and whole FIXED and WORKING PLANT, with the exception of coals, chemicals, casks, and stock, both manufactured and in process of manufacture, together with all rights belonging to the partnerships, all as occupied and used by the said firms.

The works are situated in the vicinity of Bathgate, upon the railway from Bathgate to Morridge, by which they are inter-communicated, and there is a communication by railway from the works to the Edinburgh and Glasgow, the Caledonian, and the Monkland Railways.

The lands extend to about 25 acres, and the feu duty unredeemed amounts to £161 10s. 6d. or thereby.

The works may be seen on Mondays, between the hours of Twelve and Three, by tickets only, which may be had at Messrs. Houns and Rose's chambers, 39, North Castle-street, Edinburgh, by whom offers for purchase by private bargain will be received, or before the 15th October next.

#### VALUABLE COPPER MINE FOR SALE.

This mine, already extensively developed, has yielded about £20,000 worth of ore. The plant and machinery are of a most superior character. The main shaft is sunk and timbered 40 fathoms below adit. A comparatively small further outlay will there be little doubt, render this property a good dividend-paying mine. It has a powerful steam-engine, capable of draining the mine to thrice its present depth below adit. Engine-houses, pumps, tramways of great length, water-power, cranes, dressing, smithy, carpenters' shop, powder magazine, office, agent's dwelling-house, cottages, and everything, in short, requisite for immediate and extensive operations. Being contiguous to the sea, coals, &c., can be landed, and ore, &c., shipped from the mine itself, or 250 tons of ore per month. The lease has 31 years to run, and there are many untapped lodes besides those chiefly explored. Most favourable reports on the mine, from a well-known mining engineer, have been received. The vendors would entertain an offer from a respectable company, and take the larger portion of the purchase money in shares.—Apply to Mr. J. HOLAN, 62, Moorgate-street, London, E.C.

#### FOR SALE, THE ABERDOVEY SILVER-LEAD MINE.

This mine is situated about three miles from the port of Aberdovey, in Merionethshire, North Wales, and extends over 296 acres. There are numerous lead lodes running through the sett. In the present workings a shaft has been sunk 42 fms., from which four levels have been driven, and with a moderate outlay lead ore has been obtained to the amount of more than £15,000. A large stream of water runs through the sett, sufficient to work the mine to a considerable depth. There are two powerful water-wheels for pumping, &c., and every necessary appliance for raising, dressing, &c., or 250 tons of ore per month. The present proprietors not being in a position to find funds to work the mine as energetically as should be done, now offer the same to the public, feeling assured that in a few months, with a liberal expenditure, the mine will become a good paying property. Reports of the mine, and any information, can be had of Mr. J. B. LAWS, 50, Threadneedle-street, London, to whom application is to be made as to price, &c.

#### FOR SALE, ON reasonable terms, a FREE MINER'S RIGHT

an EXTENSIVE CALCAREOUS HEMATITE IRON ORE GALE, in the FOREST OF DEAN. The ore can be reached at a moderate depth from the surface, and the gale joins the route of the Worcester Dean Forest and Monmouth Railway.—For further particulars, and to treat, apply to Mr. T. FORSTER BROWN, mining engineer, Machen, Newport, Monmouthshire.

#### FOR SALE, THE RIGHT TO THE PATENT OF A VALUABLE

IMPROVEMENT IN VALVES AND BUCKETS FOR PUMPS, and in VALVES OR COCKS FOR OTHER USES.—For particulars, apply to Mr. W. T. RAWLIN, patent and mining agent, 39, Budge-street, Bristol.

#### WIRE ROPES FOR SALE, BY PRIVATE CONTRACT.

ONE WIRE ROPE, 196 fms. long; EIGHT ditto, each 183 fms. long; and TWO ditto, each 116 fms. long; all ¼ in. circumference, weighing 22 lbs. per fathom, made of the best charcoal iron wire, by Messrs. Glass, Elliott, and Co.—Applications to be addressed Messrs. COCHRAN, GILCHRIST, and Co., Clifton Suspension Bridge Works, Bristol, where every information can be obtained.

#### MERIONETHSHIRE, NORTH WALES.

**TO BE DISPOSED OF, A SLATE QUARRY PROPERTY** vein proved, and position commanding all advantages. Also, a VALUABLE GRANT, possessing a RICH SILVER-LEAD MINE, with other lodes, very valuable. To treat for the same, apply to Mr. H. P. OWEN, C.E., Penrynendranth, Carnarvon.

Mr. OWEN has OTHER MINES and QUARRIES TO DISPOSE OF. Also, begs to offer his services to gentlemen in all inspections of native mineral, with practical reports thereon. Immediate attention given.

#### IRON.—TO BE GRANTED, for a term of 21 years, the RIGHT

to WORK a very EXTENSIVE MINE of RICH HEMATITE IRON ORE, situated in the parish of SHAUGH PRIOR, on the south coast of Devon, about six miles from a wharf belonging to the proprietors, where the ore can be shipped free of duty and at all seasons of the year.

The South Devon and Tavistock Railway passes within a very short distance of the mine, and is in direct communication with the wharf, thereby affording facilities for running the trucks alongside of the vessels.

For further particulars, and to treat for a set, application to be made to Mr. C. RADCLIFFE, solicitor, Plymouth.



**NICHOLLS, WILLIAMS, AND CO., ENGINEERS,**  
BEDFORD IRONWORKS, TAVISTOCK.  
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made on the BEST AND NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the manufacture of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS OF EVERY DESCRIPTION, both of brass and of iron. HAMMERED IRON AND HEAVY SHAFTS OF ANY SIZE. CHAINS made of the best iron, and warranted. RAILWAY WORK OF EVERY DESCRIPTION.  
ALL ORDERS FOR ABROAD RECEIVE THEIR BEST ATTENTION. NICHOLLS, WILLIAMS, AND CO. have had 30 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.  
Messrs. NICHOLLS, WILLIAMS, AND CO. have always a LARGE STOCK OF SECOND-HAND MINE MATERIALS in stock, and at moderate prices.

**E L L I S L E V E R,**  
PATENTEE AND MANUFACTURER OF  
FLEXIBLE TUBING FOR MINES AND COLLIERIES  
BRATTLE CLOTH  
WEST GORTON WORKS, MANCHESTER.

**PALFREYMAN AND CLARK, PRACTICAL ENGINEERS,**  
are PREPARED TO MAKE DRAWINGS AND UNDERTAKE THE EXECUTION OF LOCOMOTIVES AND STATIONARY ENGINES FOR IRONWORKS, MINES, &c., and MACHINERY IN GENERAL. They will also superintend the execution of orders in this country for abroad.—4, Corporation-street, Manchester.

**TAVISTOCK IRONWORKS AND STEEL ORDNANCE COMPANY (LIMITED).**  
(LATE GILL AND CO.)  
ENGINEERS, IRON AND BRASS FOUNDERS,  
MANUFACTURERS OF  
STEAM ENGINES, BOILERS, AND MACHINERY OF ALL KINDS.  
CHAINS, SHOVELS, EDGE TOOLS, AND EVERY DESCRIPTION OF CAST AND HAMMERED IRON FOR MINING, MANUFACTURING, RAILWAY, OR AGRICULTURAL PURPOSES.  
Machinery sent to all parts of the world.  
Foreign mining companies supplied on liberal terms.

**BEVERLEY IRON AND WAGON COMPANY (LIMITED).**—  
RAILWAY WAGON BUILDERS, MAKERS OF THE PATENT PRIZE CLOD CRUSHERS AND AGRICULTURAL IMPLEMENTS, MANUFACTURERS OF PATENT WHEELS, &c., with wood or iron naves.  
Coach builders, wheelwrights, coach proprietors, &c., should use these wheels, as they are the best and cheapest in the world.  
Gentlemen, farmers, and others applying direct to the works will be liberally treated. Catalogues, prices, &c., can be obtained on application to the Works, Beverley, Yorkshire.  
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OLDBURY WORKS, NEAR BIRMINGHAM.  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, AND EVERY DESCRIPTION OF IRONWORK.  
Passenger carriages and wagons built, either for cash or for payment over a period of years.  
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LONDON OFFICES.—6, STOREY'S GATE, GREAT GEORGE STREET, WESTMINSTER.

**THE BIRMINGHAM WAGON COMPANY (LIMITED)**  
is PREPARED TO SUPPLY RAILWAY WAGONS OF EVERY DESCRIPTION, capable of carrying 6, 8, or 10 tons, at annual rentals, or for purchase on deferred payments, on advantageous terms.  
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**THE MIDLAND WAGON COMPANY,**  
ESTABLISHED 1853.  
RAILWAY WAGONS.—This company having from SIX to SEVEN THOUSAND COAL, COKE, IRONSTONE, and BALLAST WAGONS, have generally a number to let for one or more years, including repairs, at Rugby, Peterborough, Shrewsbury, Chester, Carnforth, Stoke-on-Trent, Staveley, Droitwich, Worcester, Gloucester, Reading, Hereford, Newport (Mon.), Cardiff, and Birmingham.  
They also CONTRACT FOR WAGON REPAIRS at any of the above stations.  
The company BUILD EVERY DESCRIPTION OF RAILWAY WAGONS AND CARRIAGES FOR CASH, or by DEFERRED PAYMENTS, extending over three, five, seven, or ten years.  
HENRY BRIDGES, Sec.  
Midland Works, Birmingham.

**COAL CUTTING MACHINERY.**—  
THE WEST ARDSLEY COMPANY having, by recently patented improvements, perfected their coal cutting machinery, worked by compressed air, are NOW READY TO MAKE CONTRACTS FOR THE CONSTRUCTION AND USE OF THEIR MACHINES.  
The results of twelve months' experience in the working of these machines, by the West Ardsley Company, have proved most satisfactory, their use being found to CHEAPEN THE COST AND IMPROVE THE AVERAGE SIZE OF THE COAL, TO LIGHTEN THE LABOUR, and also TO MODIFY THE SANITARY CONDITION OF THE MINE.  
All communications to be made to Messrs. FINTON, DOMESTON, and BOWEN, No. 8, Britannia-street, Leeds.

**NOTICE.**—THE WEST ARDSLEY COMPANY, having reason to believe that their patents are being infringed upon, hereby give notice that they will TAKE LEGAL PROCEEDINGS AGAINST ALL PARTIES who may MAKE FOR SALE, or USE ANY MACHINERY in the construction of which any such INFRINGEMENT IS MADE.

**EDWARDS'S PATENT MINERAL ORE AND COAL WASHING MACHINE.**—This is by far the MOST ECONOMICAL, as well as the MOST PERFECT MACHINE MADE. Each machine is capable of washing 25 to 30 tons per diem, according to quality.—Full particulars, testimonials, &c., may be obtained from E. EDWARDS, Esq., C.E., 1, York-buildings, Adelphi, where a working model may be seen.

**BASTIER'S PATENT CHAIN PUMP**  
APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY APPLICABLE TO ALL KINDS OF MINES. DRAINAGE, WELLS, MARINE, FISH, &c.

J. U. BASTIER begs to call the attention of proprietors of mines, engineers, architects, miners, and the public in general, to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shafts, and unites lightness with a degree of durability almost imperishable. By means of this hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine, as fully demonstrated by use:—  
1.—It utilizes from 80 to 92 per cent. of the motive power.  
2.—Its price and expense of installation is 75 per cent. less than the usual pumps employed for mining purposes.  
3.—It occupies a very small space.  
4.—It raises water from any depth with the same facility and economy.  
5.—It raises with the water, and without the slightest injury to the apparatus, sand, mud, wood, stone, and every object of a smaller diameter than its tube.  
6.—It is easily removed, and requires no cleaning or attention.  
J. U. BASTIER, sole manufacturer, will CONTRACT TO ERECT HIS PATENT PUMP IN HIS OWN EXPENSE, and will GUARANTEE IT FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors, and others, for the USE of his INVENTION.

OFFICES, 47, WARREN STREET, FITZROY SQUARE.  
London, March 21, 1859. Hours from Ten till Four. J. U. BASTIER C.E.

THE BANKING, MINING, AND JOINT-STOCK COMPANIES REVIEW,  
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SCIENCE AND THE ARTS.

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Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the bona fide merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the money market as affecting the returns of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range for profit than any other public securities. The best are free from debt, have large reserves, and pay dividends 10-monthly varying from £15 to £25 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to railways and mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment; we will, therefore, forward, upon receipt of Post-office order for 5s., the names of six dividend and six progressive companies that will, in our opinion, well repay capitalists for money employed.

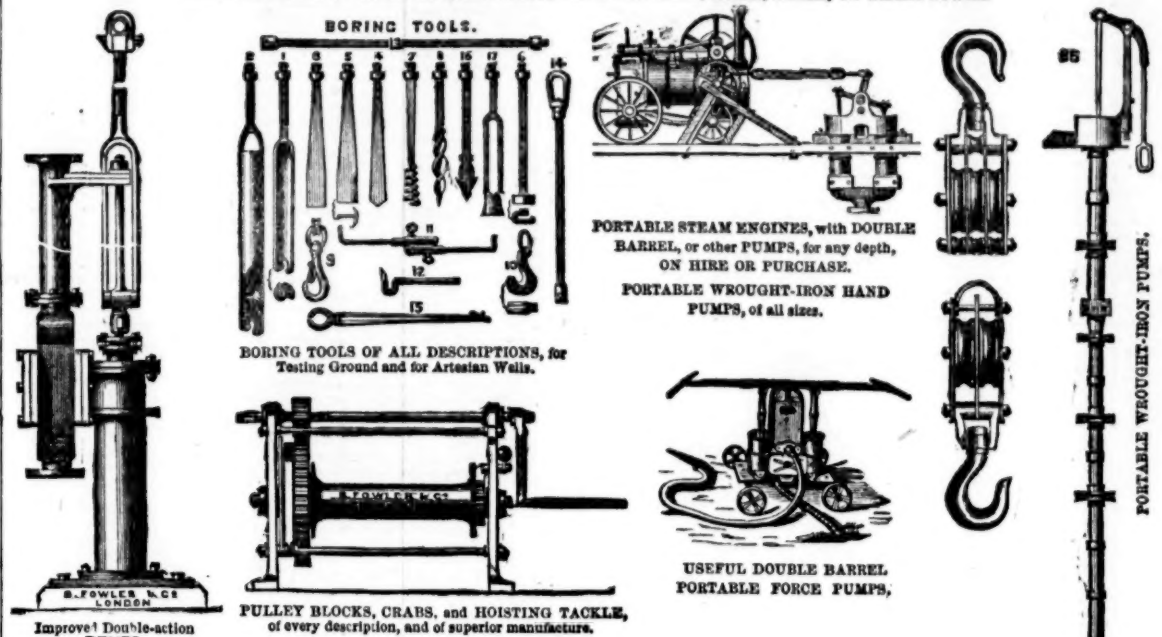
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Published every Saturday, price 2d., or quarterly 2s. 2d.  
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Published every morning, price 1d.  
Office, 42, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

FOR GRATUITOUS CIRCULATION.  
DR. SMITH has just published a Free Edition of his valuable work, the PRIVATE MEDICAL FRIEND (116 pages), on the Self-Cure of Nervous Debility, Loss of Memory, Dimness of Sight, Lassitude, &c., resulting from the sins of youth. Copies will be sent post-free to any address on receipt of a directed envelope, enclosing two postage stamps.—Address, Dr. SMITH, No. 8, Burton-crescent, Tavistock-square, London, W.C.

DR. WATSON, F.R.S. (of the Lock Hospital, and College of Physicians and Surgeons) on the Self Cure of Nervous and Physical Debility, Irritability, Decline of Manly Vigour, and Diseases of Indiscretion, with Means for Perfect Restoration, free for six stamps, by Dr. Watson, 1, South-crescent, Bedford-square, London. Consultation daily from Eleven till Two and Six till Eight. Sunday, the 11th Twelve.

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WHITEFRIARS STREET, FLEET STREET, LONDON,  
HYDRAULIC AND GENERAL ENGINEERS,  
MANUFACTURERS OF PUMPS OF EVERY DESCRIPTION FOR HAND, HORSE, STEAM, OR WATER POWER.



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PRICE LISTS, ESTIMATES, DRAWINGS, and FULL PARTICULARS of anything relating to work of classes noted above, may be had on application.

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RICHARD KITCHIN, ENGINEER AND IRONFOUNDER,  
SCOTLAND BANK IRONWORKS, WARRINGTON.

Prize Medal Awarded Great Exhibition, 1851, and International Exhibition, 1862.

**PATENT SAFETY FUZE WORKS, TUCKINGMILL, CORNWALL.**—We beg respectfully to inform the public that since the decease of the late Mr. THOMAS DAVEY this firm has consisted of JOHN SOLOMON BICKFORD, GEORGE SMITH, FRANCIS FRYOR, SIMON DAVEY, and WILLIAM BICKFORD SMITH. It is requested that all letters may be addressed, and all cheques and drafts made payable to us, as  
BICKFORD, SMITH, AND CO.

**THE UNITY PATENT SAFETY FUZE COMPANY**  
SCORRIER, CORNWALL, SOLICIT ORDERS FOR THE DIFFERENT KINDS OF SAFETY FUZE which they are PREPARED TO SUPPLY, of SUPERIOR QUALITY, and of ANY LENGTH.

**THE CORNWALL BLASTING POWDER COMPANY** beg to announce they are NOW SUPPLYING their PATENT BLASTING POWDER at £40 per ton.—St. Allen Powder Mills, near Truro, September 19, 1864.

First Class Silver Medal, Royal Polytechnic Society, Falmouth, 1864.

**CREASE'S PNEUMATIC TUNNELLING ENGINE,**  
FOR SUPERSEDING THE SLOW AND EXPENSIVE USE OF MANUAL LABOUR IN SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to sink shafts at the rate of 3 fms. in three days.  
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.  
Applications to be addressed (for the present) to the patentee, Mr. E. S. CREASE, Tavistock, Devon.

**GARNOCK, BIBBY, AND CO.,**  
CHAPEL STREET, LIVERPOOL,  
MANUFACTURERS OF PLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.  
MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, AND THIRTY PER CENT. CHEAPER THAN RUSSIAN HEMP ROPE.  
WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

**THOMAS TURTON AND SONS,**  
MANUFACTURERS OF  
CAST STEEL FOR PUNCHES, TAPS, AND DIES,  
TURNING TOOLS, CHISELS, &c.  
CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT AND CRANK AXLES, SHAFTS, and  
FORGINGS OF EVERY DESCRIPTION.  
DOUBLE SHEAR STEEL,  
BLISTER STEEL,  
SPRING STEEL,  
GERMAN STEEL.  
T. TURTON.  
EDGE TOOLS MARKED WM. GREAVES & SON  
Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

**SHEAF WORKS AND SPRING WORKS, SHEFFIELD.**  
LONDON WAREHOUSE.—35, QUEEN STREET, CANNON STREET, CITY, E.C.  
where the largest stock in the world may be selected from.

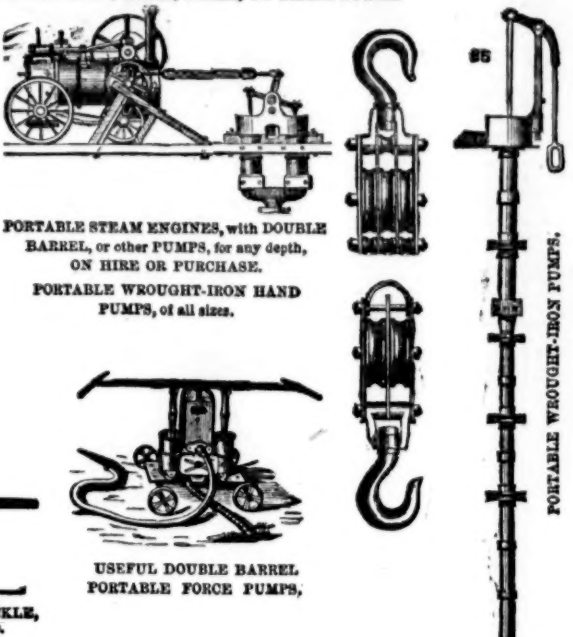
**TO IRON AND COAL MASTERS, MINING AND QUARRY COMPANIES, &c.**  
FOR PREVENTING IRON FROM RUST, AND WOOD FROM DECAY.  
**A BRILLIANT JET BLACK, SUPERIOR TO PAINT IN**  
APPEARANCE, dries in less time, contains preservative qualities of the best description, and is economical in its use; one gallon, at 1s., is equal to 14 lbs. of paint, which costs 4s. For COLLIER HEAD GEARING, RAILWAY WAGONS, BOILERS, CASTINGS, CANAL BOATS, &c., it is especially adapted. In casks containing 10, 15, and 20 cwts. each. In quantities of 1 ton and upwards, price £11 per ton.

**TURPENTINE SUBSTITUTE.**  
GLOVER AND CO. have now on hand a really splendid painting sample of spirits of turpentine substitute, a pure crystal, not less desirable than the genuine American turpentine, and quite innocuous to smell. Price, 2s. per gallon, in 30-gallon casks.

**PETROLEUM.**  
This oil gives a pure, white, soft, and brilliant light, easily regulated, and portable. For works or public buildings, where gas is not desirable, the brilliancy and economy of the article are unequalled.

**WASTE NO OIL.**  
STRONG IRON OIL CISTERNS.  
Not liable to leak, and which economise space in the stores. From 600 gallons, 48 diameter by 84 in height, price £10 10s., down to 10 gallons, 15 diameter by 21 in height, price 15s., WITH EVERY VARIETY OF SIZE AND PRICE BETWEEN.

**STRONG IRON BUCKETS.**  
3½ galls. .. 4s. 6d. | 3 galls. .... 3s. 6d. | 2½ galls. .... 3s. 6d. | 4 galls. .... 4s. 6d.  
**WAGON GREASE.**  
GLOVER AND CO., No. 40, MANESTY LANE, LIVERPOOL.



Improve Double-action PUMPS.  
PRICE LISTS, ESTIMATES, DRAWINGS, and FULL PARTICULARS of anything relating to work of classes noted above, may be had on application.

**CLAYTON, SHUTTLEWORTH, AND CO.,**  
ENGINEERS,  
MANUFACTURERS OF PORTABLE AND FIXED STEAM ENGINES, MACHINERY FOR PUMPING, HOISTING, GRINDING, SAWING, &c., ENGINES FOR STEAM CULTIVATION, SELF-MOVING ENGINES FOR COMMON ROADS AND AGRICULTURAL PURPOSES GENERALLY.  
STAMP END WORKS, LINCOLN; and  
78, LOMBARD STREET, LONDON.  
ALSO AT  
LOWENGASSE No. 44, LANDSTRASSE, VIENNA, and GEGENUBER DEM BAHNHOF, PESTH.  
Descriptive, illustrated, and priced catalogues free per post.  
SPECIAL DRAWINGS WHEN REQUIRED.  
THE BEST STEAM THRASHING MACHINERY MADE.

**WEIGHING MACHINERY**  
CONSISTING OF  
PLATFORM WEIGHING MACHINES AND HIND'S PATENT RAIL AND ROAD WEIGHBRIDGES, overhead TRAVELLING WEIGHING CRANES AND CRABS, RAILWAY WEIGHING TURNABLES, &c.  
CRANES  
Of the WALL, PILLAR, PORTABLE, or TRAVELLING KINDS; and CRABS AND WINCHES FOR STEAM OR HAND POWER, &c. Also, TURNABLES, WATER COLUMNS, TANKS, AND PUMPING MACHINERY, and GENERAL RAILWAY PLANT, manufactured by  
RICHARD KITCHIN, ENGINEER AND IRONFOUNDER,  
SCOTLAND BANK IRONWORKS, WARRINGTON.

Prize Medal Awarded Great Exhibition, 1851, and International Exhibition, 1862.

**PATENT SAFETY FUZE WORKS, TUCKINGMILL, CORNWALL.**—We beg respectfully to inform the public that since the decease of the late Mr. THOMAS DAVEY this firm has consisted of JOHN SOLOMON BICKFORD, GEORGE SMITH, FRANCIS FRYOR, SIMON DAVEY, and WILLIAM BICKFORD SMITH. It is requested that all letters may be addressed, and all cheques and drafts made payable to us, as  
BICKFORD, SMITH, AND CO.

**THE UNITY PATENT SAFETY FUZE COMPANY**  
SCORRIER, CORNWALL, SOLICIT ORDERS FOR THE DIFFERENT KINDS OF SAFETY FUZE which they are PREPARED TO SUPPLY, of SUPERIOR QUALITY, and of ANY LENGTH.

**THE CORNWALL BLASTING POWDER COMPANY** beg to announce they are NOW SUPPLYING their PATENT BLASTING POWDER at £40 per ton.—St. Allen Powder Mills, near Truro, September 19, 1864.

First Class Silver Medal, Royal Polytechnic Society, Falmouth, 1864.

**CREASE'S PNEUMATIC TUNNELLING ENGINE,**  
FOR SUPERSEDING THE SLOW AND EXPENSIVE USE OF MANUAL LABOUR IN SINKING SHAFTS, DRIVING LEVELS, TUNNELLING, &c., is guaranteed to sink shafts at the rate of 3 fms. in three days.  
Mr. CREASE will undertake contracts for sinking shafts, driving levels, &c., at an enormous reduction of time and great saving in cost.  
Applications to be addressed (for the present) to the patentee, Mr. E. S. CREASE, Tavistock, Devon.

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CHAPEL STREET, LIVERPOOL,  
MANUFACTURERS OF PLAT AND ROUND HEMP AND IRON AND STEEL WIRE ROPES FOR MINING, RAILWAY, AND SHIPPING PURPOSES.  
MANILLA ROPE OF SUPERIOR QUALITY, FIFTY PER CENT. STRONGER, AND THIRTY PER CENT. CHEAPER THAN RUSSIAN HEMP ROPE.  
WIRE ROPE OF FIRST QUALITY WIRE, and the HIGHEST STANDARD OF STRENGTH.

**THOMAS TURTON AND SONS,**  
MANUFACTURERS OF  
CAST STEEL FOR PUNCHES, TAPS, AND DIES,  
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CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT AND CRANK AXLES, SHAFTS, and  
FORGINGS OF EVERY DESCRIPTION.  
DOUBLE SHEAR STEEL,  
BLISTER STEEL,  
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EDGE TOOLS MARKED WM. GREAVES & SON  
Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

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LONDON WAREHOUSE.—35, QUEEN STREET, CANNON STREET, CITY, E.C.  
where the largest stock in the world may be selected from.

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**WAGON GREASE.**  
GLOVER AND CO., No. 40, MANESTY LANE, LIVERPOOL.

**THE PATENT TUBULAR TUYERE** possesses GREAT ADVANTAGES over the ORDINARY TUYERES, both for its DURABILITY and EASY WORKING. A current of cold water going direct to the nozzle prevents their destruction, however much they may be exposed to the fire.  
We repair them at half the first cost, making them equal in size to new ones, all parts returning their carriage paid.

No. 1 tuyere, 16 in. long ..... 28s. each.  
No. 2 " 18 " ..... 32s. "  
No. 3 " 20 " ..... 36s. "  
No. 4 " 22 " ..... 40s. "  
No. 5 " 24 " ..... 44s. "  
Delivered at Chesterfield station. Terms, nett cash quarterly.

**BLAKE'S PATENT STONE BREAKER,**  
OR ORE CRUSHING MACHINE,  
FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England.  
The above section illustrates Blake's Stone Breaker, just as made the last five years, and is fully protected in every part by patents.  
Extract from Specification:—A short but powerful vibration is imparted to one or both of the jaws by any convenient arrangement, and combination of powerful levers, worked by a crank or eccentric on the main shaft.  
LEGAL PROCEEDINGS will be taken at once against any person or persons found making, using, or vending any machine, the construction of which will constitute an infringement on the above patent. Read extracts of testimonials:—  
Aikali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.  
Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.  
Our 15 by 7 in. machine has broken 4 tons of hard winstone in 20 minutes, for fine road metal, free from dust. Messrs. Oud and Maddison, Stone and Lime Merchants, Darlington.  
Kirkcaldy Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton. JOHN LANCASTER.  
Oreoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. Wm. G. ROBERTS.  
General Fremont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.  
For circulars and testimonials, apply to—  
**H. R. MARSDEN, SOHO FOUNDRY,**  
MEADOW LANE, LEEDS.  
Only maker in the United Kingdom.



## THE MINING SHARE LIST

## BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
1200	Adelphi Edge (cop.), Cheshire [L. 1.]	10 0 0	—	—	10 0 0	10 0 0
4000	Bedford United (copper), Tavistock	10 0 0	—	—	10 0 0	10 0 0
1248	Boscawell (tin, copper), St. Just	6 15 0	—	—	6 15 0	6 15 0
300	Bottallack (tin, copper), St. Just	91 6 0	—	—	91 6 0	91 6 0
8000	Bronfod (lead), Cardigan [L. 1.]	2 7 6	—	—	2 7 6	2 7 6
916	Cargill (silver-lead), Newlyn	15 6 7	40	38 40	15 6 7	40
1800	Carn Brea (copper, tin), Illogan	15 0 0	55	50 55	15 0 0	55
3000	Clifford Amalgamated (cop.), Gwent	30 0 0	31	30 31	30 0 0	31
12000	Copper Mines of England	25 0 0	—	—	25 0 0	—
40000	Do. (stock)	100 0 0	—	—	100 0 0	—
867	Cwm Eryn (lead), Cardiganshire [L. 1.]	7 10 0	—	—	7 10 0	—
128	Cwmynwili (lead), Cardiganshire	60 0 0	—	—	60 0 0	—
200	Darwent Mines (all-lead), Durham	800 0 0	—	—	800 0 0	—
1024	Devon Gt. Con. (cop.), Tavistock [S.E.]	1 0 0	600	580 600	1 0 0	600
268	Dolcoath (copper, tin), Camborne	128 17 6	—	—	128 17 6	—
1500	Drake Walls (tin, copper), Calstock	2 1 0	—	—	2 1 0	—
512	East Bassett (cop.), Redruth [S.E.]	29 10 0	67	69 67 1/2	29 10 0	67
6144	East Caradon (copper), St. Cleer [S.E.]	2 14 6	28	26 28	2 14 6	28
800	East Darnley (lead), Cardiganshire	39 0 0	—	—	39 0 0	—
128	East Pool (tin, copper), Pool, Illogan	34 6 0	—	—	34 6 0	—
8000	East Rosewarne (cop., tin), Gwennap	2 15 0	3	3	2 15 0	3
1906	East Wheel Lovell (tin), Wendron	2 18 6	7 1/2	7 1/2	2 18 6	7 1/2
2800	Foxdale (lead) Isle of Man [L.]	25 0 0	—	—	25 0 0	—
8000	Frank Mills (lead), Christow	3 18 6	—	—	3 18 6	—
12000	Great Laxey (lead), Isle of Man [L.]	4 0 0	16 1/2	14 1/2	4 0 0	16 1/2
1798	Great Wheel Fortune (tin), Breage	18 6 0	9	7 9	18 6 0	9
8000	Great Wh. Vor (tin, cop.), Helston [S.E.]	40 0 0	39	29 30	40 0 0	39
112	Great Work (tin), Gernoe	100 0 0	—	—	100 0 0	—
3094	Herodotus (id.), near Liskeard [S.E.]	8 10 0	—	—	8 10 0	—
400	Lisburne (lead), Cardiganshire, Wales	18 15 0	—	—	18 15 0	—
8000	Martha Valley (copper), Cardam	4 10 0	—	—	4 10 0	—
3000	Minera Boundary (lead), Wrexham [L.]	1 0 0	—	—	1 0 0	—
3000	Minera Mining Co. [L.] (id.), Wrexham	25 0 0	—	—	25 0 0	—
40000	Mining Co. of Ireland (cop., lead, coal)	7 0 0	27 1/2	27 1/2	7 0 0	27 1/2
8000	Mynydd (iron ore) [L.] [S.E.]	2 10 0	—	—	2 10 0	—
250	Nanty Mines (lead), Montgomery	30 0 0	—	—	30 0 0	—
6000	New Birch Tor and Viller Con. (tin)	1 6 6	2 1/2	2 1/2	1 6 6	2 1/2
8000	North Treaskerby (copper), St. Agnes	1 9 0	3 1/2	3 1/2	1 9 0	3 1/2
6409	Par Conso (cop.), St. Blazey [S.E.]	1 2 6	—	—	1 2 6	—
3000	Parys Mines (copper), Anglesey [L.]	50 0 0	—	—	50 0 0	—
1772	Poiborro (tin), St. Agnes	15 0 0	—	—	15 0 0	—
112	Providence (tin), St. Agnes	8 0 0	—	—	8 0 0	—
8000	Rosewall Hill and Ransom Unit [L.]	3 10 0	40	38 39	3 10 0	40
612	South Caradon (cop.), St. Cleer [S.E.]	1 0 0	530	535 545	1 0 0	530
612	South Tolgus (cop.), Redruth, Cornwall	8 0 0	—	—	8 0 0	—
498	S. Wh. Frances (cop.), Illogan [S.E.]	18 18 6	50	—	18 18 6	50
4000	St. Day United (tin), Redruth	14 0 0	—	—	14 0 0	—
8000	St. Ives Conso (tin), St. Ives	8 0 0	25	20 25	8 0 0	25
2000	Tinctor (cop., tin), Pool, Illogan [S.E.]	9 0 0	19	17 19	9 0 0	19
4000	Widra and Gwennap (copper) [L.]	6 0 0	—	—	6 0 0	—
8000	West Bassett (copper), Illogan [S.E.]	1 10 0	—	—	1 10 0	—
3000	W. Chiverton (id.), Ferranabuloe [S.E.]	6 1/2	8 1/2	8 1/2	6 1/2	8 1/2
256	West Damsel (copper), Gwennap	38 10 0	—	—	38 10 0	—
400	W. Wh. Seta (cop.), Camborne [S.E.]	47 10 0	215	205 210	47 10 0	215
612	Wheel Bassett (copper), Illogan [S.E.]	6 2 6	95	90 95	6 2 6	95
1000	Wheel Bassett and Grylls (tin)	7 0 0	—	—	7 0 0	—
612	Wheel Jans (silver-lead), Redruth	3 10 0	—	—	3 10 0	—
4000	Wheel Killy (tin), St. Agnes	6 4 6	—	—	6 4 6	—
1024	Wheel Killy (tin), Ury Lelant [S.E.]	8 0 0	—	—	8 0 0	—
1024	Wh. Mary Ann (id.), Menheniot [S.E.]	8 0 0	15 1/2	16 17	8 0 0	15 1/2
100	Wheel Mary (tin), Lelant	36 2 6	—	—	36 2 6	—
80	Wheel Owles (tin), St. Just, Cornwall	70 0 0	—	—	70 0 0	—
396	Wheel Seta (copper), Camborne	58 10 0	215	207 212 1/2	58 10 0	215
1040	Wh. Treawny (all-id.), Liskeard [S.E.]	5 17 0	30	19 20	5 17 0	30
2044	Wheel Tremayne (tin), Gwennap	6 11 3	—	—	6 11 3	—
7000	Wicklow (copper) [L.]	2 10 0	14 1/2	14 1/2	2 10 0	14 1/2

[\* Dividends paid every two months. † Dividends paid every three months.]

## BRITISH MINES WITH DIVIDENDS IN ABEYANCE.

240	Boscawell (tin), St. Just	20 10 0	—	—	20 10 0	1 0 0	Mar. 1863
8000	Chiverton (lead), Ferranabuloe [S.E.]	6 0 0	—	—	6 0 0	6 1/2	6
268	Conduvor (cop., tin), Camborne	76 10 0	—	—	76 10 0	—	—
2480	Cook's Kitchen (copper), Illogan	17 15 0	14	12 13	17 15 0	—	—
1024	Copper Hill (copper), Redruth	12 0 0	—	—	12 0 0	—	—
1058	Craddock Moor (copper), St. Cleer	8 0 0	—	—	8 0 0	—	—
4076	Devon and Cornwall (copper), Tavistock	12 6 0	—	—	12 6 0	—	—
3000	Dyffryn (lead), Wales	12 6 0	—	—	12 6 0	—	—
940	Fowey Conso (copper), Tywardreath	4 0 0	—	—	4 0 0	—	—
8000	Great South Tolgus, Redruth	0 14 6	2 1/2	2 1/2	0 14 6	—	—
10240	Gunnis Lake (Clitters' Adit)	0 2 0	—	—	0 2 0	—	—
160	Levant (copper, tin), St. Just	2 10 0	—	—	2 10 0	—	—
640	Mount Pleasant (lead), Mold	4 0 0	—	—	4 0 0	—	—
8000	Oreid (lead), Flintshire	0 8 0	—	—	0 8 0	—	—
8000	South Eastmouth (lead), Christow	1 1 6	—	—	1 1 6	—	—
280	Spearne Moor (tin, copper), St. Just	32 17 6	—	—	32 17 6	—	—
572	Trelyn Conso (tin), St. Ives	14 0 0	7	—	14 0 0	—	—
1000	Trumpet Conso (tin), near Helston	11 10 0	—	—	11 10 0	—	—
12000	Twelve Apostles Amal. (id.), Wrexham	1 0 0	—	—	1 0 0	—	—
1024	Wendron Conso (tin), Wendron	19 13 0	—	—	19 13 0	—	—
60	West Burton Hill (lead), Yorkshire	50 0 0	—	—	50 0 0	—	—
1024	West Caradon (cop.), St. Cleer [S.E.]	1 0 0	9	6 1/2 7 1/2	1 0 0	—	—
1024	Wheel Friendly (copper), Devon	20 0 0	—	—	20 0 0	—	—
1024	Wheel Grylls (tin), Ferranabuloe	3 14 0	—	—	3 14 0	—	—
896	Wheel Margaret (tin), Ury Lelant	10 17 6	8 1/2	8 1/2	10 17 6	—	—
6400	West Fowey Conso (tin and copper)	7 10 0	—	—	7 10 0	—	—

## FOREIGN DIVIDEND MINES.

30000	Australian (cop.), S. Australia [S.E.]	7 7 6	—	—	7 7 6	—	—
2484	Burra Burra (cop.), S. Australia	8 0 0	—	—	8 0 0	—	—
4000	Centrales (copper), S. Australia	6 0 0	—	—	6 0 0	—	—
15000	Cape Copper Mining [L.] [S.E.]	7 0 0	11	9 1/2 10 1/2	7 0 0	—	—
12000	Cobre Copper Co. (cop.), Cuba [S.E.]	40 0 0	31	26 28	40 0 0	—	—
100000	Don Pedro No. Del Rey [L.] [S.E.]	0 10 0	—	—	0 10 0	—	—
70000	English and Australian [S.E.]	8 0 0	—	—	8 0 0	—	—
15000	East Indian Coal, Calcutta [L.]	0 0 0	—	—	0 0 0	—	—
25000	Fortuna (lead), Spain [L.] [S.E.]	2 0 0	—	—	2 0 0	—	—
25000	Gv. Mining Ag. (copper), S. Australia	0 28 6	—	—	0 28 6	—	—
48000	Kapunda Mining Co. [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
15000	Linares (id.), Pozo Ancho, Spain [S.E.]	3 0 0	6	6 1/2	3 0 0	—	—
10000	Lusitanian (of Portugal) [S.E.]	9 0 0	—	—	9 0 0	—	—
10000	Pontbaid (all-lead), France [S.E.]	0 20 0	—	—	0 20 0	—	—
97000	Port Phillip (gold), Clunes [S.E.]	1 0 0	—	—	1 0 0	—	—
11000	St. John del Rey [L.] [S.E.]	15 0 0	38	36 38	15 0 0	—	—
43174	Union Mexican (all), Mexico [S.E.]	28 8 0	4 1/2	—	28 8 0	—	—
10000	Yancovier (coal) [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
25000	Victoria (London) Mining Co. [L.]	1 0 0	—	—	1 0 0	—	—
20000	Yudana Mining Company [L.]	1 0 0	—	—	1 0 0	—	—
45000	Yudana Mining Co. [S.A.] [L.]	3 0 0	2 1/2	1 1/2 1 3/4	3 0 0	—	—

## FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Altan and Quinquenon (cop.), Chile [L.]	4 10 0	—	—	4 10 0	—	—
10000	Copala Mining Company, Chile [L.]	16 0 0	—	—	16 0 0	—	—
10000	Gt. Barrier Land, Min. Co. [L.] [S.E.]	10 0 0	—	—	10 0 0	—	—
10815	Marquitta and New Granada [S.E.]	1 0 0	—	—	1 0 0	—	—

## NON-DIVIDEND FOREIGN MINES.

36000	Alamillos (lead), Spain [L.]	1 0 0	1 1/2	—	1 0 0	—	—
100000	Anglo-Brazilian (gold) [L.] [S.E.]	0 5 0	—	—	0 5 0	—	—
20000	Barris Tin Streaming Company [L.]	0 17 6	—	—	0 17 6	—	—
25000	Capula (silver), Mexico [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
17000	Central Italian (copper) [7000 £ paid]	0 6 0	—	—	0 6 0	—	—
10000	Copala Smelting [L.] [S.E.]	10 0 0	—	—	10 0 0	—	—
75000	Don Mountain (copper), New Zealand [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
50000	East del Rey (gold), Brazil [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
30000	East Kongsberg Native Silver Mining Co. of Norway [L.]	1 12 0	—	—	1 12 0	—	—
8000	English and Canadian Mining Company [L.]	8 0 0	—	—	8 0 0	—	—
40000	Fortuna (copper), W. Australia [L.]	2 0 0	—	—	2 0 0	—	—
80000	Frontino and Bolivia (gold), S. Australia [L.] [S.E.]	1 10 0	—	—	1 10 0	—	—
24000	Hindostan (copper), Bengal [L.] [S.E.]	3 0 0	—	—	3 0 0	—	—
4000	Hope Silver-Lead and Copper Mining Co. [L.] [S.E.]	25 0 0	—	—	25 0 0	—	—
10000	Karbita Colliery Company [L.]	1 0 0	—	—	1 0 0	—	—
30000	Lagunillas (sulphur, copper), Portugal [L.]	1 0 0	—	—	1 0 0	—	—
100000	Monte Auro (gold), Brazil [L.] [S.E.]	2 0 0	—	—	2 0 0	—	—
10000	New Grand Duchoy of Baden (silver-lead), near Freiberg	1 0 0	—	—	1 0 0	—	—
10000	Ova (copper) [L.] [S.E.]	0 10 0	—	—	0 10 0	—	—
15000	Pachoa Silver Mining Company, Mexico [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
80000	Panuello (copper) [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—
8000	Peel River Land and Mineral [Limited]	100 0 0	—	—	100 0 0	—	—
23000	Quelbarra (copper), Venezuela [L.] [S.E.]	6 10 0	—	—	6 10 0	—	—
80000	Rosa Grande (gold), Brazil [L.] [S.E.]	0 5 0	—	—	0 5 0	—	—
10000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 15 0	—	—	0 15 0	—	—
60000	Santa Barbara (gold), Brazil [L.] [S.E.]	0 17 6	—	—	0 17 6	—	—
120000	Scottish Australian Mining Company [L.]	3 0 0	—	—	3 0 0	—	—
12000	Teplitz Colliery Co., Bohemia [L.]	3 0 0	—	—	3 0 0	—	—
6000	Valdemar Mining Company [L.]	8 0 0	—	—	8 0 0	—	—
80000	Valdemar Mining Company [L.] [S.E.]	0 7 6	1 1/2	1 1/2	0 7 6	—	—
45000	Victor Emanuel (copper), Italy [L.]	1 0 0	—	—	1 0 0	—	—
1000	Western Africa Malachite (copper)	110 0 0	—	—	110 0 0	—	—
12000	Wheel Ellen (copper), South Australia [L.]	8 0 0	—	—	8 0 0	—	—
80000	Worthing (copper), South Australia [L.] [S.E.]	1 0 0	—	—	1 0 0	—	—

## PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Last Call.
1000	Alt-y-Crib (lead) [L.] [S.E.]	4 12 6.	..	..	..
4000	Bagtor (tin) [L.]	2 0 0.	..	..	..
4000	Bedford Consols (cop.) Tavistock	2 0 0.	..	..	..
2000	Bedel Aur (lead), Holywell	0 12 0.	1 1/4.	1 1/4.	..
3000	Berehaven (copper), Ireland	1 0 0.	..	..	..
500	Billins (lead)	30 0 0.	13 1/2.	12 1/2.	..
4000	Boscawen (tin), Kenwyn	2 10 0.	..	..	..
2200	Boswell (tin), Cornwall	1 10 0.	..	..	..
5000	Bottle Hill (tin) Plymouth	1 6 0.	..	..	..
80000	Bromfield (tin), Ministry of Pym	1 0 0.	..	..	..
200	Brynford Hall (lead), Flint	30 0 0.	..	..	..
500	Bryn Gwlog (lead), Flint	9 0 0.	..	20 25	..
1832	Bryntal (lead), Llanidloes	8 7 6.	3 1/2.	3 3/4.	..
4800	Bryntal & Bassett (cop.) Redruth	41 6 6.	..	..	..
12000	Calstock Consols (cop.) Calst.	17 6 6.	..	..	..
215	Calveadine (tin), W. Cornwall	2 10 0.	..	..	..
1000	Camborne Consols (copper)	18 0 0.	..	..	..
4000	Camborne Veau & Wh. Francis	9 18 4.	..	..	..
75000	Cambrian Consolid. (gd.) [L.] [E.]	1 0 0.	..	..	..
8000	Cape Cornwall (cop.) [L.] [E.] [S.E.]	1 0 0.	..	..	..
12000	Caradon & Phoenix Cons. [L.] [E.]	0 10 0.	..	1	..
914	Caradon Cons. (cop.) St. Cleer	29 6 6.	..	..	..
6000	Caradon Unit (cop.) St. Neots	1 0 0.	..	..	..
2500	Carmanthorpe (lead)	8 0 0.	..	..	..
2000	Carroll (tin and cop.)	1 0 0.	..	..	..
6000	Carn Camborne (cop.) Cambu.	1 9 0.	32s.	34s.	..
3000	Carr Vivian (tin, cop.) lead	2 1 6.	..	..	..
3048	Carnyorth (tin, cop.) St. Just	4 10 0.	..	..	..
20000	Caryfort (3200 £2 1/2 pd., 16800 £1 pd.)	1 0 0.	..	..	..
10000	Castleward, Ireland [L.] [E.]	1 0 0.	..	..	..
3500	Cefn Cilan (tin), Flint [L.] [E.]	2 8 6.	..	..	..
5000	Cefn Gwyr Brynno (lead)	4 0 0.	..	..	..
2000	Central Grylla (tin) [L.] [E.]	2 10 0.	..	..	..
2500	Central Main (tin) [L.] [E.]	2 10 0.	..	..	..
6000	Charlotte Und. Ferranathos	5 2 8.	..	..	..
8000	Chiverton Moor (lead)	3 0 0.	..	..	..
8000	Chiverton Valley (lead)	3 0 0.	..	..	..
4000	Clara Unit, Pontefryd [L.] [E.]	2 2 0.	..	..	..
1024	Cleer's Hill (tin), St. Stephen's	0 2 0.	..	..	..
787	Clijah & Wentworth (tin, cop.)	33 0 0.	..	..	..
3000	Clowance Wood [L.] [E.]	2 0 0.	..	..	..
16000	Clowance & Boscawen (tin), 10700 £2 1/2 pd.	1 0 0.	..	..	..
60000	Connors (cop. sulph.) [L.]	1 0 0.	..	..	..
6000	Cornish Clay and Tin [L.]	1 0 0.	..	..	..
861	Crane (copper), Camborne	24 0 0.	..	..	..
3000	Crenver and Wh. Abraham [L.]	2 10 0.	..	..	..
12000	Crelake (cop.) Tavistock	2 13 0.	..	..	..
2000	Crowlwm (lead), Llanidloes	11 10 0.	..	..	..
4000	Cuddra (cop., tin), St. Austell	4 5 0.	..	..	..
15000	Dale (lead), North Stafford	1 0 0.	..	..	..
1000	Darren (lead) [L.] [E.]	3 5 0.	12	..	..
2000	Deep Level Miners [L.] [E.]	3 5 0.	..	..	..
672	Ding Dong (tin), Guilva	44 10 6.	..	..	..
1000	Dolfrwynog (gold) [L.] [E.]	0 15 0.	..	..	..
10000	Durio (tin), Lelant	8 12 0.	..	..	..
1000	Eaglebrook (lead) [L.] [E.]	17 2 0.	..	..	..
1000	East Bassett and Grylla (tin)	2 7 6.	..	..	..
6000	E. Bottle Hill (tin), Plymouth	0 4 6.	..	..	..
6000	East Cambrian (tin) [L.] [E.]	1 0 0.	..	..	..
6000	East Carr Brea (cop.) Redruth	15 0 0.	7 1/2.	6 1/2.	7 1/2.
2000	East Chiverton (lead)	2 10 6.	..	..	..
6000	E. Clogau (gold), Merio. [L.] [E.]	0 6 0.	..	..	..
4000	East Devon Gt. Consols (cop.)	1 14 0.	..	..	..
3048	E. Falmouth (s.-ld.), Kenwyn	5 0 6.	..	..	..
6000	E. Grenville (cop.) Camborne	2 0 0.	7 1/2.	7 1/2.	7 1/2.
6000	E. Gt. Work (tin), Breage [L.] [E.]	2 10 0.	..	..	..
6000	E. Gunns Lake S. Redr. (cop.)	7 15 6.	..	..	..
6145	East Lane (tin), Camborne	2 0 0.	..	..	..
6000	East Laxa (lead) [L.] [E.]	2 0 0.	2 1/4.	2 3/4.	..
1024	E. Margaret (tin), Ury Lelant	20 5 0.	..	..	..
6000	E. Polberron (tin) [L.] [E.] [4000 £1 pd., 4000 £2 1/2 pd.]	1 0 0.	..	..	..
3986	E. Providence (tin), Ury Lel.	4 9 8.	..	..	..
5610	East Seton (cop.) Camborne	0 10 0.	..	..	..
256	East Tolgus (copper), Redruth	88 0 0.	..	..	..
6000	E. Trekerby (cop.) Redruth	10 0 0.	6 1/2.	6 6 1/2.	..
9600	East Wheel Alloy (tin), Redruth	9 0 0.	..	..	..
1130	E. Wheel Alloy (cop.) St. Cleer	11 17 0.	..	..	..
4000	E. Wheel Eilen (cop.) St. Agnes	0 7 6.	..	..	..
2000	E. Wh. Fortune (tin) Sitchey	1 0 0.	..	..	..
2048	East Wheel Grylla (tin, cop.)	2 2 6.	..	..	..
5000	East Wheel Metal (tin and cop.)	..	..	..	..
4000	E. Wh. Russell, Tavistock [S.E.]	9 5 6.	5 1/2.	4 1/2.	5
5000	East Wheel Vor (tin and cop.)	5 0 0.	..	..	..
5144	Erwin (lead) [L.] [E.]	0 3 10.	..	..	..
5000	Fortescue Cons. (sil.) Endellion	0 12 6.	..	..	..
5000	Furze Hill Wood Cons. (Buckl.)	1 5 6.	..	..	..
1026	Garden (tin), Morvah	4 17 9.	..	..	..
4096	Garlidna Unit (tin), Wendron	4 1 6.	..	..	..
10000	Garreg (lead), Flint	5 14 6.	..	..	..
4000	Gawton (copper), Tavistock	2 9 6.	..	..	..
5000	Gen. Min. Co. for Irel. (cop.)	4 0 0.	4 1/2.	..	..
5000	Glenogard Consol. (tin, cop.)	0 0 0.	..	..	..
32	Goiphin (tin, cop.) [L.] [E.]	4 0 0.	..	..	..
5000	Goginan (silver-lead)	12 10 0.	..	..	..
5000	Goich Hill (lead), Flintshire	1 0 0.	..	..	..
5144	Gonamena (copper), St. Cleer	4 9 0.	..	..	..
5000	Gonazion (copper), St. Neot	1 12 6.	..	..	..
486	Grabb. & St. Aub. (cop.) [S.E.]	63 0 0.	9	..	..
4000	Great Brigan (cop.) Redruth	6 11 0.	..	..	..
4096	Great Cardon (cop.) St. Agnes	1 0 0.	..	..	..
5000	Great Devon and Corn. (tin)	1 15 0.	..	..	..
5000	Gt. East Lovell (tin), Helston	1 0 0.	..	..	..
4000	Great North Downs (copper)	4 0 0.	4 1/2.	4 1/2.	..
4000	Gt. Retallack (all-ld., blende)	2 6 6.	..	..	..
5000	Great S. Chiverton (all-ld.)	0 10 0.	3 1/2.	3 3/2.	..
4000	Great Tregune Consols (cop.)	0 5 0.	..	..	..
4000	Great West Chiverton (lead)	1 16 0.	..	..	..
730	Great Western (tin)	1 0 0.	..	..	..
4000	Gt. Wh. Nant, Breage [L.] [E.]	1 0 0.	..	..	..
4000	Gt. Wh. Bury (cop., tin), Ken.	13 14 6.	2 1/2.	2 1/2.	2 1/2.
072	Gt. Wh. Grylla (tin), Copper	1 0 0.	..	..	..
5000	Grit and Stapels (lead) [L.]	10 0 0.	..	..	..
048	Grylla Consols (tin)	1 5 0.	..	..	..
000	Grylla Wheel Florence (tin)	..	..	..	..
910	Gurlyn (cop., tin), St. Erth	2 14 11.	..	..	..
000	Gurlydyr Park Cons. Llanwrst	2 3 11.	..	..	..
000	Harwood (tin), Durhan [L.] [E.]	0 6 6.	3 1/2.	3 3 1/2.	..
000	Havan (ld.), Cardigan [L.] [E.]	4 0 0.	..	..	..
000	Hazel Grove (all-ld.) [L.] [E.]	0 10 0.	..	..	..
219	Hawkmoor (tin, cop.) Calstock	3 6 0.	..	..	..
000	Hendre (lead), Flint [L.] [E.]	2 10 0.	..	..	..
000	Hington Down (cop.) [S.E.]	6 10 6.	4 1/2.	4 1/2.	..
000	Holm (tin and copper)	5 2 6.	1 1/2.	1 1/2.	..
000	Hotly Bray (tin, cop.)	5 2 6.	1 1/2.	1 1/2.	..
000	Kewick (lead), Portiscale	5 6 6.	..	..	..
96	Kilmory (lead)	25 5 0.	..	..	..
000	Lady Bertha (cop.) [S.E.]	3 0 6.	..	..	..
000	Lanivet (tin), [L.] [E.]	1 14 0.	..	..	..
019	Leeds & St. Aubyn (tin)	17 6 4.	..	..	..
248	Lelant Cons. (tin), Ury Lelant	85 0 0.	..	..	..
244	Langun (ld.), Glamorgan [L.] [E.]	4 10 0.	..	..	..
000	Langun (ld.), Glamorgan [L.] [E.]	4 10 0.	..	..	..
000	Long Rake (lead), Flint	4 10 0.	..	..	..
000	Lower Park (ld.) Denbigh [L.]	3 11 0.	..	..	..
000	Maudlin (copper), Lostwithiel	4 2 0.	..	..	..
480	Merilyn (lead), Flint	4 1 6.	..	..	..
5000	Minera Western Boundary [L.] [E.]	0 2 6.	..	..	..
000	Mineral Bottom (lead)	3 0 0.	..	..	..
000	Mollard (cop.) St. Neot	2 9 0.	..	..	..
024	Nangles (tin, copper), Kamb.	19 0 0.	36 27	..	..
000	Nantos and Panrhir [L.]	4 0 0.	..	..	..
000	Nantos (lead) [L.] [E.]	0 10 0.	..	..	..
512	Nant Miners (lead) [L.] [E.]	6 0 0.	..	..	..
000	Nant-y-lago (ld.), Merioneth	8 17 6.	..	..	..
000	New East Birch Tor (tin)	0 2 6.	..	..	..
000	New Concord (all-ld.) [L.] [E.]	..	..	..	..
000	New Cornish (ld.) [L.] [E.] [1000 £2 1/2 pd.]	..	..	..	..
514	N. Crow Hill (ld.) St. Stephen	2 12 6.	..	..	..
400	N. E. Russell (cop.) Tavistock	0 8 0.	..	..	..
400	Nether Heath (lead), Dufton	0 18 6.	..	..	..
400	New Hendra (tin, cop.) Breage	2 11 0.	..	..	..
000	New Rosebark (tin and cop.)	0 0 0.	..	..	..
024	New Rosebark (tin, cop.) Gwinnar	2 0 0.	11	10 11	..
000	New S. Cardon (cop.) St. Neot	3 0 0.	..	..	..
969	New Trelduth (tin, cop.) Redruth	3 3 0.	..	..	..
060	New Trevenen (tin), Wendron	7 4 0.	..	..	..
070	Newtownards Min. Co. Down	50 0 0.	..	..	..
400	New Wendron (tin), Wendron	7 0 0.	4 1/2.	3 1/2.	4 1/2.
024	New Wh. Grylla (tin and cop.)	2 1 6.	..	..	..
098	New Wheel Lovell (tin)	2 3 6.	..	..	..
098	New Wheel Marthas (cop.) [L.]	1 0 0.	1 1/2.	1 1/2.	1 1/2.
098	New Wh. Rose (ld.) [L.] [E.]	..	..	..	..
400	New Wh. Seton (cop.) Camb.	34 15 0.	..	..	..
000	New Wh. Vor & Metal Und. (tin)	0 2 6.	..	..	..
024	North Buller (cop.) Redruth	26 13 6.	..	..	..
15000	North Down (all-ld.) [L.] [E.]	0 13 0.	..	..	..
4000	N. Dolcoath (cop.) Camborne	3 18 0.	..	..	..
2500	N. Down (cop.) Redruth	2 18 4.	..	..	..
2500	N. France (cop.) Redruth	15 17 6.	..	..	..
3500	Nth. Gole Hill (lead)	4 0 10 0.	..	..	..
1366	N. Grambler (cop.) Redruth	2 9 6.	..	..	..
8000	N. Gt. Work, Breage [L.] [E.]	2 9 6.	..	..	..
4096	North Grylla (tin), Gernoe	0 6 6.	..	..	..
16000	N. Hattenbale [3000 £1 pd., 8000 £2 1/2 pd.]	..	..	..	..
4000	North Jane (tin, silver-lead)	2 9 6.	..	..	..
4000	Levant (tin, cop.) St. Just	3 3 0.	..	..	..
30000	N. Miners (ld.) [L.] [E.] [500 £1 pd., 5000 £2 1/2 pd.]	..	..	..	..
4000	N. Phoenix (cop.) Llanidloes	1 15 6.	..	..	..
4400	No. Pool (tin and cop.) Hlogan	1 15 6.	..	..	..
700	N. Roskar (cop.) Camborne	33 5 0.	..	..	..
6144	North Rosewarne (copper)	1 0 0.	..	..	..
2000	N. Shepherds (all-ld.) Newlyn	3 0 0.	..	..	..
6000	N. Wh. Bassett (cop.) [L.] [E.]	4 2 6.	2 1/2.	1 1/2.	2 1/2.
5610	North Wh. Crofty (cop.) [S.E.]	2 10 6.	..	..	..
615	N. Wh. Robert (tin), Gwennap	3 12 11.	..	..	..
1000	N. Wh. Seton, Camborne [L.] [E.]	2 10 0.	..	..	..
12388	Okei Tor (cop.) Calstock	5 2 0.	..	..	..
1000	Pant-y-Fydw (lead)	2 7 0.	..	..	..
8465	Peden-an-drea (tin), Redruth	4 3 6.	..	..	..
5000	Pendean Cons. (cop.) St. Just	4 9 6.	..	..	..
6000	Penhalls (tin), St. Agnes	2 15 0.	..	..	..
512	Penbulla Moor (silver-lead)	3 0 0.	..	..	..
512	Penrith (all-ld.) Merioneth	2 7 0.	..	..	..
300	Penrith (ld.) [L.] [E.]	22 10 0.	..	..	..
4000	Polhigey Moor (tin), Wendron	1 15 6.	..	..	..
12800	Prince of Wales (tin), Calstock	0 6 6.	..	..	..
8000	Princess of Wales (tin), Smeadred	1 0 0.	..	..	..
8000	Prosper Unit (tin, cop.) St. Hilary	7 1 6.	..	..	..
10186	Redmoor (cop.) [L.] [E.]	0 14 6.	..	..	..
512	Retanna Hill (tin), Wendron	2 17 6.	..	..	..
5000	Rhafn (lead), Carnarvon [L.] [E.]	0 10 0.	..	..	..
4096	Rhailon E. W. Rose (tin)	1 0 0.	..	..	..
8000	Roseborough Down (cop.) [L.] [E.]	1 0 0.	..	..	..
4026	Rosewarne Consols (copper)	4 11 6.	..	..	..
3848	Rosewarne United (cop.) tin	3 12 9.	..	..	..
8000	Roskar (copper), Camborne	0 10 0.	..	..	..
700	Roskarnworth (cop.) Camborne	10 10 0.	..	..	..
2000	Scorrier Cons. (tin, cop.) St. Agnes	4 13 6.	..	..	..
590	Siegenia, Montgomery [L.] [E.]	5 0 0.	..	..	..
1200	Silver Moun. (lead)	2 0 0.	..	..	..
20000	St. Yelan, W. Gwynn [1500 £1 pd., 5000 £2 1/2 pd.]	..	..	..	..
4096	Sithney Wheel Metal (tin)	3 10 0.	..	..	..
12300	Soltridges Cons. (cop.) [S.E.]	1 0 0.	..	..	..
6000	So. Alfred (cop.) Phil. & Gwin.	0 12 6.	..	..	..
512	South Bassett (cop.) Gwennap	16 10 8.	..	..	..
100	South Bryn				